Subway's Grab & Go Facial Recognition Case Analysis

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Executive Summary

Subway, the second-largest restaurant chain in the world, engineered a turnaround beginning in 2022 after seven consecutive years of revenue decline. Central to this recovery was Grab & Go smart fridge, an AI-powered interactive vending machine placed in non-traditional locations such as university campuses, airports, hospitals, and casinos. As facial recognition gained traction across the retail industry in 2024, CEO John Chidsey faced a pivotal decision: should Subway equip its Grab & Go fridges with facial recognition software?

This analysis examines the decision through Porter's Five Forces, SWOT analysis, organizational structure, stakeholder analysis, and an ethical assessment of facial recognition technology. Subway's competitive advantage in automated vending depends on brand trust, franchise-driven freshness, and frictionless convenience – not data collection. The industry landscape reveals a pattern of backlash: Invenda machines removed from the University of Waterloo, Kroger drawing congressional scrutiny, Walmart abandoning facial recognition after poor performance, and the FTC investigating surveillance pricing. Stakeholder analysis identifies all stakeholders as facing increased risk if facial recognition is adopted. Ethical analysis reveals racial bias in facial recognition, raising concerns for brands serving diverse communities.

Three alternatives were considered: a full facial recognition rollout, a limited opt-in pilot, and an enhanced non-biometric AI approach using purchase analytics, predictive inventory management, and improved interactive screens. Alternative 3 is recommended as it's the only solution that strengthens the Grab & Go program's competitive position, serves all stakeholders without introducing reputational or regulatory risk, addresses the ethical concerns surrounding biometric data collection, and preserves the consumer trust that Subway's turnaround depends on.

Introduction

Subway was founded in 1965 by Fred DeLuca and Dr. Peter Buck with a $1,000 investment in Bridgeport, Connecticut. What began as a single sandwich shop grew through franchising into the world's second-largest restaurant chain, operating 37,000 restaurants globally by 2024. After five decades of success, Subway experienced seven consecutive years of U.S. revenue decline from 2014 to 2020, falling from $11.9 billion to $8.32 billion (Di Muro, 21). The turnaround began in 2022 with the Subway Series menu overhaul and the Grab & Go smart fridge – an AI-equipped interactive vending machine placed in non-traditional locations such as university campuses, airports, hospitals, and casinos. By 2023, North American revenues recovered to $9.98 billion, and in 2024, Subway was acquired by Roark Capital Management.

Central to this recovery is the Grab & Go fridge, which extends Subway's distribution beyond traditional storefronts into high-traffic, "in-the-moment" settings. These unattended, AI-powered fridges feature natural language processing, weight-sensor shelves for accurate pricing, and UV-C light sanitation after every purchase. Stocked daily by local franchisees, they leverage consumer demand for convenience, speed, and 24/7 accessibility. By 2024, non-traditional locations made up approximately 25% of Subway's North American presence, making the Grab & Go concept a core growth pillar (Di Muro, 1). As competitors like PizzaForno and RoboBurger deploy similar automated vending technology, should Subway equip its Grab & Go fridges with facial recognition software?

The core issue isn't technical feasibility – it's whether facial recognition aligns with Subway's strategic position during a fragile turnaround. The case in support seems beneficial: demographic data, personalized marketing, and behavior analytics could optimize the Grab & Go experience. Yet the industry landscape presents a clear pattern of risk. At the University of

Waterloo, students discovered Invenda vending machines collecting facial data without disclosure, prompting the university to remove all 29 machines (Di Muro, 4). Kroger's facial recognition pilot drew immediate scrutiny from lawmakers warning of discriminatory surge pricing and personalized profiling. Walmart deployed the technology to catch shoplifters but removed it due to poor performance. In July 2025, The FTC launched an investigation into surveillance pricing, examining how firms used consumer data to adjust prices based on estimated willingness to pay. Furthermore, Subway's non-traditional locations predominantly serve younger demographics like college students, a population that has already demonstrated willingness to push back against biometric surveillance. Ultimately, this decision lies at the intersection of data-driven competitive advantage and the consumer trust that fuels Subway's turnaround. The wrong choice could undo the progress the Grab & Go strategy has built.

Industry & Competitive Analysis

Mission and Generic Strategy

Subway's "Eat Fresh" mission centers on serving fresh, customizable sandwiches accessible prices. The brand was built around the idea that customers could watch their sandwich being made, choose their own ingredients, and receive something personalized. This commitment to freshness has been reinforced over time: Subway has baked its bread in store since the early 1980s, and in 2023, the company replaced pre-packed and pre-sliced meat with freshly sliced ones. The 2022 introduction of the Subway Series further signaled Subway's commitment to evolving its offerings while staying anchored in quality and freshness.

Subway competes in the quick-service restaurant industry primarily through a cost leadership strategy, offering affordable meals rivaling chains like McDonald's and Wendy's, while differentiating through freshness, customization, and healthier options. The Grab & Go

fridge extends this differentiation by adding convenience and 24/7 in non-traditional locations. As vice-president of non-traditional development Taylor Bennett noted, these platforms serve guests "wherever and whenever they are craving Subway" (Di Muro, 2) – positioning the fridge as a strategic brand extension into spaces where traditional storefronts cannot reach.

Consumer trust is foundational to this strategy. Subway's identity is built on transparency and customer control – seeing exactly what goes into their food. Facial recognition in an unattended vending machine introduces a fundamentally different dynamic: data collection without active customer participation or awareness. If consumers perceive the Grab & Go fridge as a surveillance tool rather than a convenience, it directly undermines the trust Subway's brand depends on. This risk is especially severe in non-traditional locations where customers expect quick, trustworthy transactions, not biometric data collection. Any solution Subway pursues must preserve consumer trust that its differentiation strategy depends on, especially during a turnaround where trust is still being rebuilt.

Porter's Five Forces

Competitive Rivalry (High): Subway faces intense competition from sandwich chains like Jimmy John's and Jersey Mike's, fast-food giants like McDonald's, and now automated food vendors now entering the same non-traditional locations Subway's Grab & Go fridges occupy – PizzaForno produces pizza from fresh, locally sourced ingredients in three minutes, while RoboBurger assembles and cooks burgers in six minutes (Di Muno, 3). The Grab & Go fridge provides a competitive edge by establishing presence where traditional rivals have limited reach, but this edge depends on customer willingness to use the fridges. If facial recognition triggers backlash like that seen at Kroger or the University of Waterloo, Subway risks driving customers toward competing vending options or nearby alternatives that offer convenience without

surveillance concerns. In high-rivalry market, the priority should be protecting the competitive advantage the Grab & Go concept already provides.

Bargaining Power of Customers (High): Customers at non-traditional locations hold significant power because switching costs are virtually zero – a college student can walk to a campus dining hall, order delivery through an app, or skip the purchase entirely. Unlike a traditional store where a customer has already committed to entering and standing in line, the Grab & Go fridge relies on impulse and convenience – if anything disrupts that willingness, the sale is lost. The University of Waterloo incident illustrates this: once students discovered Invenda machines were collecting facial data, backlash led to the removal of all 29 machines. Because these fridges depend on high transaction volume across many locations to justify their costs, even a moderate decline in usage driven by privacy concerns could undermine the financial viability. Any technology added to the Grab & Go experience must reduce friction, not create a reason to walk away.

Bargaining Power of Suppliers (Moderate): Subway's current Grab & Go supply chain involves local franchisees stocking fridges with sandwiches made from existing store inventory of nearby restaurants, keeping suppliers straightforward. Facial recognition would introduce dependency on specialized technology vendors for biometric software, data storage, and ongoing compliance management. The Invenda incident illustrates this risk – when Invenda's technology created a public relations crisis, machines were removed entirely and businesses lost their distribution channel (Singh). If Subway becomes dependent on a facial recognition vendor whose practices draw scrutiny, franchisees bear the consequences through lost revenue and reputational damage. Maintaining the current non-biometric technology – weight sensors, natural language processing, and purchase analytics – avoids creating new supply chain vulnerabilities.

Threat of Substitutes (Moderate – High): The Grab & Go fridge competes not just with other restaurants but with every convenient food option available in such settings. In airports, customers can choose sit-down restaurants or food delivery to their gate. On campuses, dining halls, food trucks, and delivery apps all compete for the same audience. Subway's advantage in such locations is brand recognition combined with the promise of fresh, familiar food with a trusted name. Facial recognition does not strengthen this advantage – customers don't choose Grab & Go because of personalized marketing but because they want a quick sandwich from a brand they trust. If facial recognition harms this trust, customers have an abundance of substitutes available with minimum effort. The threat of substitution reinforces that Subway's response must prioritize preserving the simplicity and trust of the Grab & Go experience rather than adding features that simply are not needed.

Threat of New Entrants (Low – Moderate): Barriers to entry in the traditional quick-service restaurant industry remain high due to capital requirements, supply chain complexity, and brand-building costs. However, the automated vending segment has lower barriers. PizzaForno was able to expand from a single Toronto location in 2018 to multiple in North America by 2024, and RoboBurger launched with a single machine in New Jersey before planning expansions to airports, colleges, and military bases (Di Muno, 3). The technology powered smart fridges, including AI-driven inventory management, weight sensors, and cashless payment systems – is available to new competitors. This makes Subway's first mover advantage in sandwich vending limited. However, the sustainable competitive advantage lies in Subway's brand trust and its franchise network's ability to stock fridges with fresh products daily – not in data collection capabilities that new entrants could replicate or that could generate backlash. Beyond competitive entry, Subway faces a first-mover risk in adopting facial recognition itself. If

Subway leads on facial recognition in unattended vending, it becomes the test case – bearing the regulatory and reputational failure costs that later adopters get to avoid.

Organizational Structure

Subway operates through a franchise model, with local franchisees owning and operating individual locations. This structure extends to the Grab & Go smart fridges, which are stocked daily by local franchisees using products made in their nearby stores. However, the fridges themselves are fully unattended. This creates an accountability concern: if facial recognition were implemented, franchisees would bear the operational responsibility and reputational risk of a technology they didn't develop and might not understand. When Invenda's machines were removed over facial data collection, it was the businesses relying on those machines that lost their point of sale. In Subway's franchise model, a single privacy incident at one Grab & Go location could generate negative publicity that impacts franchisees nationwide. There'd be no staff onsite to explain data collection practices, obtain meaningful consent, or address customer concerns, making transparent communication about facial recognition more difficult than it would be in a staffed environment.

SWOT Analysis

Strengths	**Weaknesses**
- Strong brand recognition with 37,000 locations worldwide - Established Grab & Go in non-traditional locations, making up 25% of North American presence - Successful turnaround driven by Subway Series and Grab & Go – revenue approaching $10 billion - Existing AI capabilities in fridges (NLP, weight sensors, UV-C sanitation) already delivering value	- Franchise model creates inconsistent implementation of new technology across location - Grab & Go fridges are fully unattended with no staff to manage consent or address privacy concerns - No experience with prior facial recognition or biometric data management - New ownership under Roark Capital, which also owns competitor Jimmy John's, creating potential strategic tension
Opportunities	**Threats**

- Enhance Grab & Go with non-biometric AI features like purchase analytics and inventory optimization - Expand non-traditional footprint using proven, privacy-safe technology - Leverage franchise network's daily restocking as a freshness advantage competitors cannot easily replicate - Strengthen brand trust during turnaround by positioning Subway as privacy-conscious	- Regulatory pressure – FTC investigating surveillance pricing, congressional scrutiny of Kroger's facial recognition - Consumer backlash – Waterloo, Kroger, and Walmart demonstrate pattern of customer rejection - Automated competitors like PizzaForno and RoboBurger entering same non-traditional locations - Younger demographics at non-traditional locations most likely to resist biometric surveillance (Cisco)

Each weakness directly threatens Subway's competitive position if facial recognition is pursued. The franchise model disperses accountability for a technology that requires centralized data governance, meaning a single franchisee's mishandling of biometric data could trigger brand-wide reputational damage that benefits competitors like PizzaForno and RoboBurger who offer similar convenience without privacy risk. The unattended format eliminates the ability to obtain meaningful consent, exposing Subway to the same regulatory scrutiny Invenda and Kroger faced – both of which resulted in loss of consumers. The lack of biometric data experience then makes errors more likely at a time where Subway's turnaround depends on maintaining the trust that brought customers back. The opportunities show how Subway can strengthen its competitive position through non-biometric AI advancements that rivals cannot replicate without introducing the threats facial recognition would bring.

Stakeholder Impact Analysis

Stakeholder	**Interest**	**Influence**
Customers	**High:** primary users of fridges, especially students and travelers in non-traditional locations seeking a quick, trustworthy transaction – not biometric data collection	**High:** zero switching costs mean customers can simply walk away; Waterloo students triggered removal of all 29 Invenda machines through backlash alone
Franchisees	**High:** responsible for stocking and maintaining Grab & Go fridges; bear direct financial and reputational	**High:** as independent operators, franchisees could resist adoption or face local backlash that damages

	consequences of technology decisions they didn't make nor understand	their individual businesses and damages buy-in for the broader Grab & Go program
Roark Capital	**High:** acquired Subway for $9.55 billion and expects return on investment; also owns Jimmy John's, creating strategic tension if Subway scandal benefits a competing brand	**High:** as owner, Roark has final authority over strategic direction and capital allocation for technology investments
Shareholders (Roark Investors)	**High:** Roark's partners and investors funded the acquisition expecting long-term value growth; a privacy issue during Subway's turnaround could erode brand value, reduce revenue, and diminish return on a large investment	**Moderate:** they don't make operational decisions directly but can exert pressure to protect investment value, and could lose confidence if avoidable reputational risks are taken
Regulators & Lawmakers	**High:** FTC actively investigating surveillance pricing; lawmakers have directly challenged Kroger over facial recognition and discriminatory pricing concerns	**High:** regulatory action could force removal of technology, impose fines, or create compliance requirements that increase costs across all Grab & Go locations
Employees	**Moderate:** store-level employees prepare the food that stocks the fridges but don't interact with the technology directly; corporate technology and legal teams would do implementation and compliance	**Moderate:** limited direct influence on decision, but corporate teams responsible for compliance and data management would need significant resources to support facial recognition
Technology Vendors	**Moderate:** vendors would supply and maintain facial recognition software, data storage, and compliance infrastructure; vendor practices directly impact Subway's reputation	**Low:** vendors provide the technology but have no control over response to deployment

The highest-priority stakeholders – customers, franchisees, Roark Capital, and regulators – all present significant risk if facial recognition is adopted. Customers have already demonstrated willingness to reject biometric technology in the way Subway wants to implement. Franchisees absorb the operational and reputational fallout of a technology they cannot control. Roark faces unique exposure of a privacy crisis at Subway potentially benefiting Jimmy John's, a competitor within its own portfolio. Regulators are actively building the legal framework to restrict this type of data collection. The stakeholder landscape favors a solution that does not introduce biometric surveillance.

Ethical Considerations

Beyond the strategic and competitive risks, facial recognition technology raises severe ethical concerns. Research from MIT shows how the datasets used to train facial recognition algorithms carry embedded biases, where the systemic exclusion of certain groups in society is reflected in the data the technology learns from, leading to skewed results from the algorithm (Buolamwini). Facial recognition technology achieves over 99% accuracy in recognizing white male faces but has an error rate of 35% when identifying faces of color, particularly Black women (Christian). This means technology could misidentify customers, deliver inaccurate demographic data, or create experiences that differ in quality based on a customer's race or gender, directly contradicting the trustworthy experience Subway promises. Representative Rashida Tlaid raises a similar concern, stating the technology is flawed and can lead to discrimination in predominantly Black and Brown communities (Di Muro, 5). Invenda's machines were found to even capture data from passersby who weren't using the machines. For Subway, deploying facial recognition in unattended Grab & Go fridges located in public settings where customers cannot simply opt out of being near the machine raises serious questions about consent, equity, and whether the technology aligns with the ethical obligations of a brand that serves diverse communities.

Proposed Alternatives

Alternative 1: Full Facial Recognition Rollout

This alternative would add facial recognition software to all Grab & Go smart fridges to collect demographic data, enable personalized marketing, and analyze consumer behavior patterns across all non-traditional locations. This approach maximizes data collection, allowing Subway to tailor product offerings, track foot traffic, and deliver targeted promotions based on

age and gender demographics. Customers, particularly the younger demographics at university campuses, have shown strong reactions to similar technology. Franchisees would take on responsibility for a technology they did not develop and cannot explain to customers in an unattended format where no staff is present. Roark Capital and its investors would be deploying a technology that carries both benefits in data-driven optimization and risks in reputational exposure during a turnaround. Regulators are actively engaged with this technology – the FTC's surveillance pricing investigation and congressional pressure on Kroger indicate heightened scrutiny of facial recognition in retail settings. Employees at the corporate level would need to build new data governance, legal compliance, and vendor management infrastructure. Technology vendors would supply and maintain the biometric systems, but Subway's reputation would ultimately be linked to vendor practices.

Alternative 2: Limited Opt-In Pilot

This alternative deploys facial recognition in a small number of Grab & Go locations with explicit opt-in consent mechanisms, clear signage explaining data collection practices, a transparent data policy, and the ability for customers to use the fridge without participating in facial recognition. This approach allows Subway to test the technology's value on a limited scale before committing to full deployment. However, the unattended nature means there is no staff to explain what data is being collected, how it will be used, or to assist customers with the opt-in process. Despite Invenda claiming their machines only performed "facial analysis" and did not store pictures, the company's own promotional data revealed intentions to collect consumer data, and the machines captured data even from people passing by who were not actively using them (Di Muro, 4). For customers, an opt-in model adds a consent machine to a machine designed for speed and impulse purchases, lengthening the process. These customers also might not fully

understand the extent of the data collection and mindlessly accept, leaving Subway compliant in a lack of AI explainability and transparency. Franchisees hosting pilot locations take on more risk than non-pilot franchisees. Roark Capital and its investors gain data from a small pilot while the brand-level perception of facial recognition extends to all locations. Regulators may evaluate the pilot location in context of broader industry trends regardless of scale. Employees must build compliance and data governance to support the pilot. Technology vendors would supply biometric systems for a limited number of locations.

Alternative 3: Enhanced Non-Biometric AI

This alternative rejects facial recognition and instead invests in enhancing the Grab & Go fridges with privacy-safe AI capabilities: machine learning-driven purchase analytics to optimize product selection by location and time of day, predictive inventory management to reduce waste and ensure popular items are always stocked, improved interactive screens for customer engagement, and cashless payment data analysis to identify purchasing trends. Industry evidence supports this approach – AI-powered vending machines have been shown to increase revenue by 30% or more compared to traditional machines through purchase analytics and inventory optimization alone, without any biometric data collection (Naturals2Go). For customers, this alternative maintains the existing Grab & Go experience without invasive biometric data collection. Franchisees gain improved inventory management and reduce waste. Roark Capital and its investors see the Grab & Go program enhanced through operational efficiency. Regulators have no basis for scrutiny since no biometric data is collected. Employees focus resources on optimizing existing technology. Technology vendors continue the current relationship without the added complexity of biometric data management.

Recommended Alternative

Alternative 3, the enhanced non-biometric AI approach, is the recommended solution because it is the only alternative that strengthens Subway's Grab & Go competitive position while serving stakeholders without introducing the risks that Alternatives 1 and 2 carry.

The Porter's Five Forces analysis reveals that Subway's competitive advantage in the automated vending space lies in brand trust, franchise-driven freshness, and location in non-traditional spaces – not in data collection capabilities. Alternative 1 fails to account for this. A full facial recognition rollout does not reduce competitive rivalry – PizzaForno and RoboBurger compete on convenience and quality, not biometric personalization, and would benefit if Subway's technology triggers the backlash seen at Kroger and Waterloo. A full rollout does not reduce buyer power – customers at non-traditional locations already have zero switching costs, and introducing surveillance concerns gives them a reason to switch. Facial recognition increases supplier power by creating dependency on specialized biometric vendors whose practices Subway cannot fully control, as Invenda demonstrated. Alternative 2, the opt-in pilot, attempts to mitigate these risks through limited deployment, but the Five Forces pressures don't scale down. Buyer power remains the same – a student who distrusts facial recognition at one campus fridge will distrust the whole Subway brand. Supplier dependency is created at any scale of biometric deployment. Competitive rivals benefit from any negative perception, regardless of whether the technology exists in ten locations or ten thousand. Alternative 3 addresses every force constructively: it strengthens Subway's position against rivals by improving operational efficiency and product availability, it reduces buyer resistance by preserving the frictionless experience customers expect, it maintains manageable supplier relationships by building on

existing technology, and it reinforces the brand trust that substitutes and new entrants cannot easily replicate.

The SWOT analysis further supports this recommendation. Subway's identified weaknesses – a franchise model that disperses accountability, an unattended format that prevents meaningful consent, and no organizational experience with biometric data – are triggered by Alternatives 1 and 2 but avoided in Alternative 3. Facial recognition demands centralized data governance that thousands of franchisees cannot consistently manage, and unattended stores complicate customer consent without staff support. These issues persist even at a pilot scale. In contrast, Alternative 3 capitalizes on Subway's identified opportunities: enhancing Grab & Go using non-biometric AI, expanding with proven technology, and reinforcing a privacy-conscious brand image during a period when competitors are drawing scrutiny for the opposite approach. The threats identified in the SWOT – regulatory crackdown, consumer backlash, and reputational damage during a turnaround – are threats only if Subway pursues biometric data collection. Alternative 3 neutralizes them entirely.

The ethical analysis reinforces the risks of Alternatives 1 and 2 that extend beyond business strategy. Facial recognition technology has been shown to carry racial bias. Deploying this technology in diverse public settings like university campuses and hospitals creates the potential for unequal customer experiences based on race or gender. The FTC's investigation and lawmakers signal that regulators view facial recognition as a civil rights concern, not just a privacy one. Alternative 2's pilot does not resolve this, as technology's accuracy disputes exist regardless of whether a customer consents. Alternative 3 eliminated this by relying on purchase analytics and inventory optimization that view all interactions as equal.

Alternative 1 creates significant risk for every high-priority stakeholder simultaneously: customers face biometric surveillance they have rejected elsewhere, franchisees absorb reputational risk they cannot manage, Roark Capital and its investors jeopardize a $9.55 billion acquisition during a recovery period, and regulators pressure Subway's practices. The trade-off of Alternative 1 is maximum data in exchange for maximum risk, and the data gained does not address the competitive pressures that actually threaten Subway's position. Alternative 2 reduces the scale of deployment but not the level of risk. Roark's investors face the same brand-level reputational risk whether facial recognition exists at ten locations or ten thousand because even a small pilot can damage reputation. Franchisees hosting pilot locations bear more risk compared to non-pilot franchisees, creating inequity within the network. Employees must build full compliance and data governance infrastructure regardless of scale. The result is a poor trade-off: slightly less data collection with nearly the same amount of risk. Alternative 3 is the only option where no stakeholder faces elevated risk. Customers retain the simple, trustworthy experience that drives Grab & Go usage. Franchisees gain operational improvements through better inventory management and reduced waste. Roark Capital and shareholders see turnaround protected and strengthened with avoidance of controversy. Regulators have no basis for action against Subway. Employees optimize existing systems rather than building new infrastructure.

Industry trends then confirm the tradeoff of forgoing facial recognition does not forgo competitive advantage. AI-powered vending machines are shown to increase revenue by 30% through purchase analytics and inventory optimization alone. This shows how Subway can achieve full operational benefits without the reputational, regulatory, and ethical costs that facial recognition would bring.

Alternatives 1 and 2 are ultimately rejected because they introduce the same fundamental problem at different scales: exposing Subway to regulatory, reputational, ethical, and stakeholder risks during a fragile turnaround in exchange for data collection capabilities that aren't required to achieve the competitive benefits Subway needs. Alternative 3 is the only solution that aligns with the competitive dynamics identified in Porter's Five Forces, capitalizes on opportunities while avoiding weaknesses identified in the SWOT analysis, addresses the ethical concerns surrounding racial bias and surveillance pricing, and serves every stakeholder without trade-off. The Grab & Go smart fridge already drives Subway's recovery – the strategic priority is to strengthen what is working, not risk success on a technology the industry has repeatedly shown that consumers and regulators will resist.

Conclusion

The decision of whether to equip Grab & Go with facial recognition is not a technology question – it's a strategic one. Subway's turnaround from seven consecutive years of revenue decline has been built on the Subway Series menu overhaul and the Grab & Go concept's ability to reach customers in non-traditional locations through convenience, freshness, and brand trust. Every framework applied in this analysis points to the same conclusion: facial recognition introduces risk across every dimension without addressing the competitive pressures Subway actually faces. Alternative 3 is the only solution that strengthens the Grab & Go program, protects the brand during a fragile recovery, serves all stakeholders, and positions Subway as a privacy-conscious leader in automated retail.

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