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**Exploring the Influence of Domino's 30-Minute Delivery Guarantee and Ride-Hailing Innovations on the Rise of Quick Commerce (Q-Commerce)**

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**ABSTRACT**

*The objective of this research is to analyze the historical and technological roots of Quick Commerce (Q-Commerce) through an analysis of the evolution of its operational and infrastructural setup. It seeks to explore how the time-bound delivery service offered by Domino's Pizza and the digital logistics system of ride-sharing services such as Uber and Ola influenced the development of the current hyperlocal rapid delivery systems. The research methodology is qualitative and exploratory, using only secondary sources of data, which include peer-reviewed articles, industry reports, corporate studies, official government publications, and news archives. A comparative and historical analysis approach is used to assess three key aspects: (1) speed-based service offerings, (2) technological infrastructure, such as real-time tracking and dynamic routing algorithms, and (3) scalability in urban logistics infrastructure. The results show that the development of Q-Commerce was the result of the integration of operational legacy and data-driven platform innovation, rather than a discrete innovation in its own right. The consumer expectation of rapid delivery was set by Domino's, and the ride-sharing platforms introduced algorithmic optimization, orchestration, and real-time tracking. The combination of these factors made possible the creation of dark stores, hyper-local fulfillment networks, and scalable digital delivery platforms, which are the hallmarks of Q-Commerce companies. The research relies on secondary data and does not include primary empirical testing. Future studies may involve quantitative testing or cross-country analysis. In examining the development of Q-Commerce with a wider perspective, this study adds to the existing literature on the platform economy and digital logistics. This study provides a conceptual framework that identifies Q-Commerce as a consequence of the development of conventional operations and innovations in digital infrastructure.*

**Keyword:** *Quick Commerce, Domino's Pizza, 30-Minute Delivery Guarantee, Ride-Hailing Services, Last-Mile Delivery, Real-Time Tracking, Hyperlocal Delivery.*

**Introduction**

Quick Commerce (Q-Commerce) is an advanced model of retail and logistics, driven by rising demand for ultra-fast delivery of products, mainly groceries. Domino's contributed to customer demand at an early stage. The company's guarantee of pizza delivery within 30 minutes, which was established in 1973, had a profound effect on the speed of delivery and efficiency expectations. This emphasis on speed and dependability became a trademark of Domino's brand. Concurrently, ride-hailing services like Uber and Ola introduced on-demand models and real-time tracking. The technology that enabled dynamic routing and solid fleet management in ride-hailing also became significant for Q-Commerce logistics. Technologies such as AI-driven inventory management, predictive analytics, and robotics played a key role in the operational framework of Q-Commerce by ensuring speed, optimizing routes, and managing inventory. Q-Commerce developed scalable solutions in

cities for rapid, on-demand service delivery through the use of strategically placed dark stores or micro-warehouses.

Indian Q-Commerce companies such as Blinkit, Zepto, and SwiggyInstamart demonstrated an ability to scale their operations quickly by expanding their networks of dark stores and delivery fleets. In India, the market was estimated to be worth over \$3.5 billion, with an anticipated expansion to \$5.5 billion by 2025<sup>1</sup>. Q-commerce was expanding into new sectors such as beauty, electronics, and fashion accessories. However, there were questions regarding its profitability, sustainability, and labor conditions. The emphasis for the sector remained on making operations more efficient and increasing consumer satisfaction.

### Literature review

Q-Commerce has evolved alongside significant changes in consumer behavior, urban mobility, and logistical solutions largely due to e-commerce's increasing expansion. The rapid growth of e-commerce has also placed incredible stress on last-mile delivery networks. This has created a need for new logistical solutions that can meet the ever-increasing need for consumers to receive their products as quickly as possible<sup>2</sup>. This literature review examines the various technological and historical developments that built the Q-Commerce ecosystem as it existed long before.

One of the most important historical precedents for speed-focused delivery service logistics was the implementation of Domino's Pizza's 30-Minute Delivery Guarantee in 1973. As demonstrated through numerous contemporaneous business studies<sup>4</sup>, this guarantee was not just a marketing tactic but rather a means of changing the expectations of consumers regarding how quickly and reliably they could expect to receive their services. Numerous scholarly reviews have validated that this commitment created a lasting impact on service/business efficiency affecting many industries, changing how consumers perceive brand identity, and creating an ethos of speedy service in the retail logistics industry<sup>5</sup>.

The tech and operational frameworks that support today's Q-Commerce were also evolving alongside the ride-hailing industry. Companies like Uber and Ola have completely transformed urban transportation by introducing an on-demand service model that leverages real-time tracking, dynamic pricing, and predictive analytics to gauge demand.

According to **Violos et al.**<sup>2</sup>, these changes represented a significant advancement in technology and established new standards of technology for real-time, application-based logistics, beyond providing for passenger transportation by establishing new technology standards in real-time, application-based service logistics. Efficient fleet management, dynamic routing, and user-friendly applications for operating fleets were essential for developing large-scale Q-Commerce operations.

Similar links can be found by researching the various forms of urban travel. One example is a review conducted by<sup>3</sup>, which found that delivery networks began to integrate with ride-hailing platforms and their importance in providing food deliveries prior to COVID-19. As a result of this research, these platforms reshaped several operational factors associated with providing service (i.e., hours of operation, payment systems, etc.) and therefore positioned on-demand deliveries as a common aspect of urban living. This change in using personal mobility infrastructure to deliver goods represents a major milestone in urban logistics and delivery of goods.

The rapid delivery capabilities of Q-commerce depend on advanced routing and fleet management systems. As foundational logistics optimization research by **Cheung, et al.**,<sup>7</sup> discusses dynamic routing model(s) & method(s). The algorithms in this studies providing the algorithms for modern logistical systems.<sup>7</sup> also identify how fleet management leveraging mobile technology supports logistics adaptation to environmental variables (e.g., weather, traffic, changing delivery priorities), resulting in maximized efficiency. The economic models we've discussed play a vital role in achieving the necessary speed and operational density in Q-commerce. This approach helps to cut down on latency and ensures that resources are allocated efficiently.

The literature base provides a clear trajectory for the emergence of Q-commerce. This trajectory originated from the long-standing cultural expectation for speed (i.e., demonstrated by Domino's Pizza), the disruptive business models and technologies of ride-hailing services, and advanced dynamic logistics models. Collectively, these three factors have provided the foundational elements and structural foundations for the rapid delivery ecosystems that have emerged in the early 21st century. The literature indicates that Q-commerce did not emerge spontaneously.<sup>6</sup>, but it was developed by the combination of these innovations in service commitments, digital platform technologies, and logistical optimization.

## **Methodology**

### **Research Design**

This study employs a qualitative exploratory research methodology to examine the historical and technological development of Quick Commerce (Q-Commerce), focusing specifically on the operational heritage of Domino's Pizza as well as on innovations brought forth by ride-hailing platforms like Uber and Ola.

Because these objectives include studying historical evolution, convergence of technologies, and operational similarities rather than testing any statistical hypothesis or specific research question, an exploratory design is deemed appropriate for this research. Specifically, it examines how previous service models and digital infrastructure have influenced the emergence of Q-Commerce ecosystems.

### **Research Approach**

This study employs both an analytical and a descriptive methodology. Specifically, it employs three methodologies:

1. A historical analysis (to trace the history of delivery systems using speed as a key dimension, e.g., Domino's 30-minute delivery guarantee);
2. A comparative analysis (to determine how similar ride-hailing logistics are to Q-commerce delivery systems); and
3. A conceptual synthesis (to create an explanatory framework for Q-commerce development based on previously published materials).

The study is interpretive in nature and focuses on pattern identification across industries as opposed to establishing causal relationships using quantitative measures.

### **Data Sources**

This study uses only secondary data sources, such as:

- (1) Peer-reviewed journal articles

- (2) Industry reports and working papers
- (3) Corporate case studies
- (4) Government publications and laws
- (5) Trusted science and news media sources,
- (6) Company websites

Sources of literature published included academic databases and digital archives. All works used were cited properly in the reference list.

### **Domino's 30-Minute Delivery Promise: A Game-Changer Historical Context**

The creation of a 30-minute delivery policy in 1973 turned the way restaurants delivered food upside down, creating positive tension between Domino's and other companies when traditional delivery services often took too much time to receive food from restaurants. The delivery promise of **"Get your pizza in 30 minutes, or it's free"** helped establish new consumer experiences regarding how long it would take to receive an order and how reliable the order was during this time period, and connected Domino's to providing fast service and creating an enjoyable customer experience. The 30-minute delivery policy really pushed other companies to step up their game when it came to delivery methods. To keep their promise of delivering in just 30 minutes, Domino's revamped their system processes, optimized delivery routes, strategically positioned their stores in neighborhoods, and even developed a special insulated delivery system to ensure those pizzas arrive hot and fresh. Dominos removed the 30-minute delivery promise in the U.S. in 1993 due to safety concerns about the delivery drivers; however, this standard continues to influence delivery sectors. As of now, other restaurant delivery sectors, including some in India, have groups attempting to implement a similar delivery service standard.

### **Impact on Consumer Expectations**

The 30-minute delivery guarantee set significant new consumer expectations for food delivery service speed and established an entirely new standard for service performance. Domino's had set the precedent for service that has created a massive increase in the consumer's perceived value of quick delivery as a requirement for any food delivery service. New consumer expectations established through **"fast service"** have created a new paradigm for consumer behavior and provided a standard of goods and services to expectations that extend beyond food delivery and into the following industries: takeout (off-premise) food services, e-commerce, and quick commerce (Q-commerce). By establishing speed as a fundamental aspect of convenience, Domino's helped to establish and reinforce the idea of instant gratification, which laid the groundwork for the consumer desire for instant delivery of groceries and other essential products. Prior to this, the growth of new services providing guaranteed delivery within 15 minutes or less demonstrated this trend, which was originally created by the expectations propagating from the Domino's operational model.

### **Behind the Scenes The Efficiency Engine**

Delivering on a 30-minute delivery guarantee was not by chance; it was the product of multiple and intentional logistical innovations. Domino's delivered a service model that

emphasized speed and consequently created efficiency benchmarks far beyond that of pizza delivery. Kitchen processes were designed to ensure reduced preparation time. The goal was to convert orders from a phone call to being placed in the oven in less than four minutes, with baking completed in six minutes, utilizing a workflow that focused on speed and efficiency from preparation to packaging<sup>8</sup>.

This system of speed was supported by the strategic supply chain management of Domino's. The use of central commissaries and refrigerated truck networks provided an efficient and effective way to distribute dough and other ingredients from the company to retail outlets. Additionally, the large volume of deliveries made by Domino's (over 1 million) necessitated the optimization of delivery logistics in the areas serviced, with a target delivery time of eight minutes for deliveries made within a two-kilometer radius of the stores<sup>9</sup>. Another strategy was to purchase ingredients locally, as this reduces the cost of food products while enhancing the freshness of the ingredients<sup>10</sup>.

Domino's Pizza made waves in 2008 with the introduction of its Pizza Tracker. This innovative tool provided customers with real-time updates on their orders while also enabling store managers to track driver locations and enhance logistics operations. The company also deployed route optimization software and used predictive analytics to forecast customer demand to further improve operations.

The integration of kitchen design innovations, centralized supply chain management, and real-time tracking technology has allowed Domino's to achieve its delivery time guarantee. In doing so, there was an established foundation of logistics optimization that proved it's possible for speed and efficiency to coexist; this is a key element of modern-day quick commerce platform development and has been adopted and expanded upon by those platforms.

### **Putting Customers First (Before It Was Cool)**

Domino's 30-minute delivery guarantee constituted a pioneering customer-centric strategy that cultivated significant brand loyalty and trust by explicitly valuing the customer's time. This historical approach established a direct precedent for modern Q-commerce practices, such as live order tracking and service failure reimbursements<sup>12</sup>. The guarantee transcended a mere promise of speed; it incorporated a tangible commitment to customer satisfaction by offering the pizza free or at a heavy discount if the deadline was missed.

Although discontinued in the United States, the policy's structure in markets like India illustrated this commitment, albeit with specific operational caveats regarding order size and liability<sup>13</sup>. The fundamental message prioritized customer satisfaction and built a foundation for repeat business and loyalty. Scholarly analysis confirms that Domino's strategy represented a holistic concern for understanding and meeting customer needs<sup>14</sup>.

The Domino's Pizza Tracker was launched in 2008, and is an example of how companies might embody the Principle of Transparency in customer service technology. Domino's Pizza Tracker was designed to provide customers with visibility into the stages of preparing and delivering their food, relieving them of the anxiety associated with waiting for their order to be filled. It also serves as an accountability measure for the company<sup>11</sup>. The customer service department at Domino's tracks feedback from customers through customer surveys and social media, using customer feedback in general to develop insights into what customers want in their food products. The "**Pizza Turnaround**" Campaign was an example of how this approach was utilized to reformulate the company's core pizza product

based on customer insights. By showing how that type of commitment to customer focus can create value for both the business (through improving product performance) and the customer (through better personal experiences), this is an example of how companies can commit to their customers by investing in the future of their brand.

### **The Legacy Lives On**

In 1973, Domino's Pizza introduced a 30-minute delivery guarantee—their commitment to this promise transformed the business model of the service industry. The company combined fast delivery with operational efficiency and a customer-centric approach to create an archetype for rapid delivery of consumer products, which preceded the development of modern Q-commerce. This transformation has influenced consumers' expectations for ultra-fast delivery of food and other essential items.

The impact of Domino's commitment to reliable delivery is backed by academic research. First, **Peng & Lu (2017)**<sup>15</sup> documented a positive relationship between reliable delivery, customer satisfaction, perceived value, and repurchase intention. Domino's has remained committed to meeting this expectation through constant investments in logistics and technology. Research has also shown that investments in data analytics and digital transformation were critical to optimizing delivery routes, predicting demand, and enhancing customer service<sup>16</sup>.

A classic example of changing standards and defining benchmarks for convenience and efficiency through a narrow scope (in this case, the core operational promise related to guaranteeing delivery speed) is seen in the Domino's Pizza case. Additionally, they show how establishing an innovative benchmark based on core-values, logistical regularity and customer centricity leads to growth through innovation in competitive markets.

### **Innovations in Taxi Services**

#### **Historical Context**

The ride-hailing industry introduced critical technological and operational advancements that subsequently informed the development of Quick Commerce (Q-Commerce). Companies in this sector leveraged new technologies to revolutionize urban transportation by creating scalable, efficient, and user-centric solutions.

#### **Technological and Operational Parallels**

The advent of app-based ride-hailing was propelled by innovations such as dynamic pricing, efficient driver-passenger matching, and ride-pooling, which collectively altered urban transport modalities<sup>17</sup>. Core features, including real-time tracking, on-demand service access, and dynamic pricing models, initially refined for passenger transport, provided a direct template for Q-Commerce platforms. The features we see today have paved the way for instant access, clear delivery processes, and streamlined logistics that define modern quick delivery. Technologies that enable flexible fleet management and smart routing are essential for the success of ride-hailing services<sup>18</sup>, giving a significant edge that can be easily utilized in Q-Commerce logistics.

#### **Diversification and Adaptation**

Earlier, ride-hailers began to offer deliveries in addition to rides by using their driver infrastructure alongside their existing tech platforms. For example, Uber's expanded

hyperlocal delivery capabilities include leveraging its broader ride-hailing fleet to deliver goods more quickly. Likewise, Ola is investing heavily in hyperlocal delivery, utilizing their EV fleet as a significant aspect of that process. Examples such as these signify the flexibility of the industry from a technology standpoint and also illustrate how ride-hailing infrastructure and urban delivery logistics were becoming interdependent. Both instances signify how the innovation of mobility has been re-purposed, allowing for the continued evolution of consumer demands for speed and convenience.

### Main Highlight

**On-Demand Services:** The emergence of on-demand services, exemplified by platforms such as Ola and Uber, represents a transformative advancement in the transportation sector, facilitating immediate access to transportation via smartphone applications and rendering traditional taxi services reliant on prior reservations obsolete. This shift has set a new benchmark for convenience and instant access, quickly becoming a vital part of what customers expect from Quick Commerce (Q-Commerce). Research by **(Chen, pei-yu & Wu, Shin-yi. 2013)**<sup>19</sup> highlights that on-demand services are reshaping market dynamics, enabling new competitors to enter the arena and altering the competitive landscape. This approach, powered by state-of-the-art software aimed at maximizing efficiency, has swiftly created new standards for what consumers expect, pushing for faster and more effective product delivery. As indicated by **Saurav, et al.**,<sup>20</sup> hyperlocal delivery services have begun to play a vital role in shaping Q-Commerce strategy through their integration into existing infrastructure and the increase in scalability and efficiency to meet the consumer's increasing demand for an instant service.

Real-time tracking has changed how people use their phones to get rides and order food from Quick Commerce companies. These features help users feel more confident that their items will arrive safely after they place their orders, improve the quality of the experience, and increase customer satisfaction. This allows users to have a better sense of control and security by being able to see where they are being picked up/dropped off or when their order is being delivered. Q-Commerce platforms that enable delivery tracking in ride-hailing companies have created a level of visibility to instill trust in their end consumers. **H. Yu et al.**,<sup>21</sup> examine the procedures that ride-hailing companies use to monitor the movement (trajectories) of passengers to ensure passenger safety, while at the same time having to be cautious not to invade privacy. Many Q-Commerce companies have utilized the benefit of real-time tracking, providing their customers with up-to-date order status and the location of their order.

The effective fleet management of a ride-hailing service is one of the major technological advances in ride-hailing that will significantly impact Q-Commerce's logistics. Fleet management involves improving vehicle operations, as well as implementing dynamic routing techniques. In order to match qualified drivers with passengers through ride-hailing services, sophisticated algorithms are utilized to analyze real-time data and optimize models to find the shortest amount of time for the passenger to reach their destination. Most ride-hailing companies utilize algorithms that classify the driver's current location, the passenger's intended destination, the current market conditions for the passenger's ride request, and other factors to minimize the amount of time that the passenger has to wait for the ride, while minimizing the distance the driver has to drive to get to the passenger's pick-up location. Matching algorithms that incorporate both spatial and temporal

constraints have been studied to improve the effectiveness of the algorithms and increase the benefits that consumers can receive from using the service **Aydin, O. F. et al.**,<sup>22</sup>.

The principles of the above algorithmic technologies have been directly adapted and incorporated into the delivery systems of Q-Commerce. For effective delivery fulfillment within tight time frames, effective vehicle application, route optimization, and the selection of appropriate personnel to deliver products are critical factors. The combined structure of this model has incredible benefits to everyone involved, including an increase in the ability of service capacity; improved accountability due to shadowing and evaluation of individuals' performance; consistent and rapid delivery performance, thus creating higher levels of satisfaction for customers.

**Scalability and Urban Coverage:** Ride-hailing platforms such as Uber and Ola exemplify significant growth and integration within urban environments, establishing an efficient model for Quick Commerce (Q-Commerce) services that aim to enhance delivery mechanisms, as evidenced by their rapid scalability underpinned by sophisticated technological and operational frameworks. According to research by **Ranjekar, G., & Roy, D. (2023)**<sup>23</sup>, convenience, urbanization, and the fast pace of life are key factors that affect consumer behavior, which require companies to reduce their delivery times. The rise of ride-hailing and the effective management of large fleets leveraging dynamic routing in urban environments is informing Q-Commerce processes for hyperlocal fulfillment centers located closer to customers. According to the study of **Tachet, R. et al.**,<sup>24</sup> about ride-sharing and urban areas' influence, there are optimal densities and structures to provide services in response to increased demand to deliver fast deliveries, as well as improvements to the operation of Q-Commerce platforms. It is essential that Q-Commerce platforms replicate and improve their existing scalable operating models in order to capitalize on this rapidly changing demand. Ride-hailing companies have enhanced their service quality by providing customers support in a timely manner, enabling Rider-to-Rider communications in real-time, and enabling Driver-to-Rider communication via sharing of location to enhance rider satisfaction. Q-commerce firms can leverage this technology to fulfill the increased demands for rapid and dependable delivery in metropolitan areas.

## **Comparative Analysis**

### **Influence on Consumer Expectations**

In the way that ride-sharing apps (Uber and Ola) and pizza companies (Domino's) have both changed the way consumers think of convenience, they have changed how quickly and reliably they can expect service from almost all businesses, not just pizza delivery (**Peng, D. X. & Lu, G. 2017**)<sup>15</sup>. The way consumers came to expect fast pizza delivery set expectations for other businesses. For example, now that consumers are used to getting their pizza delivered in 30 minutes, they expect similar speed and reliability for other purchases (such as those made online).

At the same time, app-based services such as Uber and Ola have changed the way consumers use transportation in urban areas by making the use of location-based and instantaneous services commonplace<sup>17</sup>. The ability to request a service in less than two minutes has altered the standard for immediacy<sup>19</sup>. There has been a significant effect on the competitive environment and market structure due to the rise in consumer demand for immediacy and convenience. This demand has been met by the rapid implementation of

innovations such as hyper-local fulfillment centers and logistics for ultra-rapid fulfillment, which has been a significant response to Q-commerce.

### **Technological and Operational Innovations**

More than anything else, the foundational elements that helped define the Quick Commerce sector were the delivery-related technologies introduced by Domino's Pizza and the ride-hailing companies like Uber and Ola. To fulfil its 30-minute delivery guarantee established in 1973, Domino's Pizza created a customer-centric approach to delivery management through optimizing routing efficiency, accelerating order processing, and improving inventory control (Dhingra, Ashwani, 2021)<sup>12</sup>. Innovations for example included the ability to track one's pizza being delivered in real-time (the so-called Pizza Tracker), which greatly enhanced customer confidence in the transparency of the delivery process.

In parallel, the ride-hailing industry also released real-time tracking of rides and used GPS-based systems to provide a dynamic routing capability, which increased customer transparency and helped to improve the customers' overall ride experience<sup>7</sup>. Q Commerce platforms have adopted similar real-time delivery tracking capabilities so customers can track their deliveries and have increased confidence in the companies providing these services.

The use of fluid software for managing large fleets enabled ride-hailing services to scale efficiently, particularly in last-mile logistics. Research indicated that Domino's deployed data science and infrastructure to support operational efficiencies<sup>16</sup>. Furthermore, the role of AI, IoT, and big data in optimizing just-in-time services was identified as linked to Q-Commerce initiatives<sup>25</sup>. Collectively, these innovations from both sectors provided the technological foundation for Q-Commerce platforms to maximize efficiency, transparency, and customer experience to meet growing demand for fast and reliable deliveries.

### **Infrastructure and Scalability**

Both the ride-sharing world and Domino's have created flexible systems and approaches that have supported the rapid growth of Quick Commerce. They both have found a systematic way of localising how they operate in each region by adjusting how they deliver/make deliveries. Foundational to Domino's is its ability to deliver its "30 minute guarantee" by creating a delivery network around each of its individual stores, which they use as their neighbourhood-based distribution point. Swapna Pradhan (2022)<sup>16</sup> highlights that by focusing on geographically constrained markets, companies can provide services that are not only reliable but also of high quality. Their operational model is similar to the "Hub and Spoke" model and acts as a micro-distribution centre for Q-Commerce, providing visibility and reducing variability in urban delivery. Another example is how Q-Commerce uses "dark stores" or "micro" warehousing, which creates locations close to the consumer for quick order fulfilment. These local nodes enable Q-Commerce to provide the ultra-fast delivery that consumers expect.

Compared to the traditional taxi operators, ride-sharing operators such as Uber and Ola have been able to scale their operations in a number of regions with ease due to their ability to utilize a platform-based asset-light business model and the availability of a large number of drivers in metropolitan cities. Research has shown that app-based ride-sharing solutions have impacted the way people commute in cities by providing new functionalities such as dynamic pricing and the ability to optimally match riders with drivers<sup>17</sup>. The ability

to scale operations in metropolitan cities with ease, using algorithms for dynamic management of vehicle fleets and route optimization, is considered a critical capability for offering services in metropolitan cities. Research also suggests that the characteristics of metropolitan cities are a critical factor in determining the success of ride-sharing apps<sup>24</sup>.

The Domino's system of quick service has been affected by the results of Domino's improving speed through operational efficiency and the use of scalable systems used in hail ride companies. According to **Peng & Lu (2017)**<sup>15</sup>, improvements in the speed of customer service from Domino's affected customers' expectations for speed as well as purchase decisions and customer satisfaction. Simultaneously, hail-rider service providers created scalable logistics systems that provide quick delivery options and increased transparency with services such as tracking your vehicle in real-time, using a mobile app to pay for your ride, and adjusting your route on the fly. The use of these technologies created a new high level of expectation from consumers regarding efficiency and transparency in service<sup>17</sup>, with studies indicating that using real-time fleet management is one of many elements making service more efficient<sup>18</sup>. These three elements of service define what constitutes Q-Commerce of today.

## Case Study

### Uber Eats

Uber's transformation from its traditional taxi services into a food delivery service, Uber Eats, is an example of taking technology and urban transportation systems designed for transportation and adapting them into a Q-Commerce service type by utilizing the existing overlap of Uber's customer base with food delivery users. By leveraging their established ride-hailing technology and infrastructure for Uber Eats, Uber successfully developed a highly efficient and all-encompassing delivery service. The algorithms and real-time tracking systems that were originally developed for matching riders to vehicles were then leveraged by both services to deliver food quickly and at an expected pace, fulfilling the established customer expectations for speed and comfort in receiving food delivery. The existing large driver pool, as well as the scalable application framework of the existing service, allowed Uber Eats to rapidly enter into new markets of food delivery. Uber has also diversified into providing grocery and other product deliveries in addition to restaurant deliveries in different markets around the world. Examples of how delivery-based services such as Uber Eats can leverage existing technology and operations to compete in the Q-Commerce market are largely presented through their success at providing a wide variety of products and services.

### Grab

Grab began as a ride-hailing tech company and grew into a full-service multi-service platform in Southeast Asia, providing multiple on-demand services. As a result of using ride-hailing technology for other purposes, Grab has proven that ride-hailing can be effectively utilized in Q-Commerce. Grab has implemented new technologies to allow additional services beyond simply carrying people to a destination; through the development of delivery capabilities (ie: delivery of food via GrabFood and delivery of parcels via Grab Express), Grab has transformed itself into a "Supers App" by allowing the combination of its current capabilities (ie., peer to peer ride delivery) with its additional functions (ie: delivering goods) and by maximising operational cost efficiencies through achieving

economies of scale, logistical effectiveness and marketplace dominance for its business. Grab has built a fast and dependable delivery service by leveraging its extensive network of drivers, its solid foundation in ride-sharing, and its smart algorithms that help monitor and select the best routes. This technological foundation, alongside consumer demand for convenience, speed, and reliability, made it possible for Grab to deliver the immediacy it offers in its ride-hailing services. Therefore, Grab's physical urban coverage in conjunction with its localization approach to varying Southeast Asian markets was critical in scaling its Q-Commerce efforts. For example, the company has specialized motorcycle taxis for traffic-choked city centers and localized payment options that include cash for areas less adapted to the digital economy. This hyper-localized strategy, backed by an asset-light infrastructure based on its ride-hailing roots, offered a strong foundation for efficiency and scale. That research identifies hyper-localization and keeping track of consumer satisfaction as the key success factors for the likes of Grab<sup>26</sup>. Moreover, the strategic partnerships of Grab with local businesses and government agencies boosted the credibility and compliance with regulations, thereby strengthening its foothold in the digital economy in the region. The success of Grab in the Q-Commerce market indicates how ride-hailing platforms can be used to meet the rising demands of consumers for immediate delivery. Grab's business model is a great example of how ride-hailing companies can broaden their horizons. By combining food and merchandise delivery with transportation services, they can tap into new markets and significantly boost their market share, all while making the most of their existing strengths and loyal customer base.

In conclusion, Uber Eats and Grab are two different but complementary examples of the use of ride-hailing technology and concepts in the Q-Commerce market. The success of these companies shows how existing operational infrastructure can be repurposed to meet changing market conditions and consumer demands. There is evidence that app-based ride-hailing services have revolutionized transportation in urban areas through innovations such as dynamic pricing, algorithms, and ride-sharing<sup>17</sup>. These examples demonstrate how innovative transport and ride-sharing technology can transform delivery services, pushing them to new heights in efficiency and customer loyalty. They reflect the fundamental principles of speed, transparency, and reliability that characterize the current Q-Commerce framework.

### **Future Prospects**

The future of Quick Commerce (Q-Commerce) has been positioned for potential transformation, driven by emerging technological advancements and the continuous evolution of operational practices. Prior to this study, several key trends were anticipated to shape enhanced efficiency, sustainability, and the navigation of regulatory landscapes.

**Emerging Technologies:** Technologies such as autonomous vehicles, artificial intelligence (AI), and 5G networks were expected to become more and more integral to Q-Commerce. Unmanned vehicles like drones and self-driving cars were anticipated to revolutionize delivery services, making it possible to deliver packages around the clock and streamline the management of delivery fleets. AI is set to play a major role in demand forecasting, real-time optimization of last-mile routes, and inventory management, and its use is expected to grow significantly. Machine learning algorithms that could analyze data to spot patterns and trends were expected to play a pivotal role in enabling better decision-making and service delivery. On top of that, the predicted widespread implementation of 5G

networks is expected to boost data transfer speeds and improve how devices communicate with each other. This will ultimately enhance real-time tracking and coordination for delivery operations. These technological innovations were expected to transform Q-Commerce platforms, allowing them to be more responsive, efficient, and capable of satisfying the rising needs of consumers. In addition, the sustainability parameters such as the implementation of route optimization algorithms, adoption of energy-efficient delivery models, and use of sustainable packaging were increasingly being recognized as the need of the hour for the sustainability of the industry.

**Sustainability:** Sustainability is becoming a bigger deal as more people express concern about environmental issues. Consequently, Q-Commerce platforms must increasingly incorporate sustainable practices into their operations. The introduction of electric delivery vehicles is an important step in making last-mile delivery more sustainable and less harmful to the environment than traditional internal combustion engines. Electric vehicles provide an alternative way of delivering products without negatively impacting our environment. According to **RELX**<sup>27</sup>, these types of initiatives are essential to achieving the Sustainable Development Goals (SDGs) because many of the SDGs focus on reducing dependence upon non-renewable energy sources. Sustainable packaging solutions are also important because they help reduce waste while minimising negative impacts on the environment. Many companies are developing packaging solutions that will help reduce waste while minimising negative impacts on the environment by incorporating compostable, recyclable, biodegradable, or reusable materials into their packaging solutions. The larger goal of sustainable packaging solutions is to eliminate waste altogether by implementing a circular economy. **HaroonRashid (2019)**<sup>28</sup> discusses how the implementation of a circular economy framework in logistics will help promote recycling and reuse in sustainable warehousing. The transition of Grab from being a transportation platform to a very broad delivery network is showing the increasing integration of on-demand services within Southeast Asia, which should produce significant benefits to long-term self-sufficiency and reductions in carbon footprints.

**Regulatory Challenges:** A significant challenge for Q-Commerce platforms is that as their services evolve, so too does their regulatory environment. Therefore, it is crucial for Q-Commerce platforms to be compliant with numerous local, regional, and global laws to offer continued operational capability. Q-Commerce platforms face two major regulatory risks associated with the use of autonomous vehicles and drones to deliver goods. First, regulatory agencies are establishing proposed regulations for the deployment of these technologies. Second, the safety and liability issues related to the use of autonomous vehicles and drones to deliver goods will also create additional challenges for Q-Commerce platforms to comply with the proposed regulations. The purpose of these frameworks will be to help assure public safety and reduce potential risks associated with these types of transportation methods.

**The Directorate General of Civil Aviation** in India has issued regulations for drone operation - The Drone Rules 2021. The regulations set forth a foundation for the management of drone activity in India, such as licensing, registration, and managing airspace. When considering gig economy workers such as delivery drivers related to labor laws and regulations, it is important to have an understanding of the worker's rights to equitable remuneration and benefits, as well as to establish and maintain positive working relationships with gig economy workers while ensuring compliance with any relevant law,

such as data privacy and security issues affecting the gig economy in the future. Companies that operate on Q-Commerce platforms will heavily rely on the movement and usage of consumers' data for optimizing their services; therefore, they should ensure they are compliant with rigorous data protection legislation intended to protect consumers and build and maintain trust. The Digital Personal Data Protection Act of 2023 is indicative of a growing trend of legislation applicable to the collection, use, and distribution of personal information in India. Similarly, there has been greater emphasis on environmental regulations, which will promote sustainability in manufacturing and will require companies to achieve emission reductions and comply with waste management requirements to avoid penalties and meet their corporate social responsibilities. The Ministry of Statistics and Programme Implementation (MoSPI)<sup>29</sup> outlines several waste management regulations as applicable to India and is evidence of the need for companies to proactively prepare for changing regulations.

**Enhanced Consumer Experience:** The combination of different types of sales channels (also known as omnichannel retailing) is becoming essential for improving the experience shoppers have when making purchases from quick commerce stores (Q-commerce). Omnichannel retailers will provide customers a unified shopping experience through all the various channels they use to interact with the retailer - whether through mobile apps, websites, in-store, or via voice-assisted devices - making their shopping experience as simple and seamless as possible. According to **Ginesys**<sup>30</sup>, omnichannel retailing is critical to contemporary e-commerce because it must effectively blend online and offline sales together for consumers. A good example of this is the personalization of consumer service through the use of product recommendations and promotions that are unique to each consumer based on their previous buying habits and the data-driven analytics that provide retailers with new insights into consumer behavior before, during, and after purchases.

According to **Bhattacharya, A. (2023)**<sup>31</sup>, building and integrating AI models with consumer data facilitates highly personalized services. AI is used for analyzing behavior to power recommendation engines and other forms of dynamic personalization, including personalized push notifications and product categories within Q-Commerce applications via data collection methods. Consumers will have an increasing desire for instant gratification, which will drive delivery speed and reliability expectations. Q-commerce creates a competitive advantage over traditional e-commerce by providing delivery times of 10-30 minutes. With real-time order tracking and full visibility in the entire delivery process, customers are able to see where their orders are and develop much greater confidence in the company, thus providing a much higher level of satisfaction overall. Additionally, by integrating online and in-store customer experiences through omnichannel integration, customers can benefit from a variety of fulfillment methods, such as shopping online and picking up their purchases either at a store or a local warehouse, therefore reducing their delivery time. The structure of this model supports an emphasis on providing personalized experiences by providing quick, seamless experiences, driving both customer loyalty and long-term sustainability.

**Global Expansion:** Q-Commerce global expansion allows for the potential to grow outside existing populous urban markets. This provides opportunities for Q-Commerce to expand into new geographic regions (suburban & rural) as part of a strategic pathway to enhance market reach and promote continued growth. In order for any successful Q-

Commerce expansion strategy, the successful Q-Commerce provider must adapt to the diversity within the marketplace (market conditions, customer behaviour and spatial characteristics). Some challenges that will face Q-Commerce providers in non-urban or less populated areas include lower levels of population density which limit the ability to provide efficient delivery options as well as potentially limited transportation/ delivery infrastructures or networks that provide varying levels of Internet penetration and different levels of digital literacy within the respective geographic regions. To mitigate these limitations Q-Commerce providers will need to support the capacity to improve community infrastructure at appropriate scales through investments in local distribution hubs and/or by leveraging existing short-haul independent retailers instead of relying solely on urban dark stores to supply goods and services. The overall success of Q-Commerce providers within the expanses of developing communities and the issues that are present will require the establishment of meaningful cooperative partnerships with independent businesses and companies that provide regional delivery services so that they can navigate the challenges relating to disadvantaged areas and provide efficient and effective last-mile solutions to their customers. In addition, the technology supporting Q-Commerce providers will need to be adaptive to accommodate differences in connectivity for individual customers (types of devices), language needs of customers, and various target customers' types will also enhance cooperation with local businesses. Q-Commerce platforms will continue through the adaptation of current operational infrastructures, the establishment of local partnerships and the flexibility provided by the technology used to support Q-Commerce and it will enable these providers to grow to meet new customers and increase their importance in the marketplace.

**Collaboration and Partnerships:** Collaboration and partnerships are becoming key players in the growth of Quick Commerce (Q-Commerce). It's clear that these relationships are shaping how this industry evolves. The competitive environment is reconfiguring relationships among Q-Commerce platforms, traditional retailers, technology companies, and logistics providers. To enhance their operations and improve the breadth of their products, businesses within Q-Commerce can tap into new services that will offer efficiencies by strategically leveraging each other's resources and unique capabilities. An example of a collaborative effort between Q-Commerce platforms and local business owners is to increase product availability through the addition of more products with such businesses, and, on the other hand, by partnering with a technology company to streamline their distribution network. According to **Osei and Asante-Darko (2022)**<sup>32</sup>, forming partnerships with local merchants affords Q-commerce access to pre-established infrastructure, local knowledge, and a broad customer base; whereas forming partnerships with technology partners to enhance logistics operations (e.g., startup logistics companies that are focused on enhancing supply chain efficiency) creates more efficient distribution operations. These types of companies can also integrate their platforms into existing warehouse management systems, as well as into networks of "dark" stores, helping to simplify last-mile delivery and fulfilment of orders.

Due to the rapid changes in consumer behaviours caused by the COVID-19 pandemic, there has been a change in the demand for quick delivery services as well as an increasing focus by quick-delivery specialist providers serving direct-to-customer brands; therefore, logistics startups provide an increasing level of distribution service that will support existing brick-and-mortar warehouse infrastructures. These collaborative relationships are a major means

of addressing logistics challenges, improving operational efficiencies, and enhancing service deliveries. By partnering together through mutual sharing of resources and expertise, partnering relationships result in a more resilient and integrated ecosystem that enhances both the performance of Q-commerce providers and the value proposition of consumers.

## Conclusion

The development of Quick Commerce (Q-Commerce) has been determined by how the innovations in technology created with ride-hailing have improved and advanced the guarantees of delivery pioneered by the original player (i.e. Domino's Pizza's 30-minute delivery guarantee, started in 1973). Prior to any retail operations being conducted online, the fast-food delivery business created an extraordinary level of expectation regarding how quickly and reliably food should be delivered as well as how these paradigms would affect changes made to existing logistical and operational priorities. Delivery performance became a significant factor that led to customer loyalty and repeat purchases. The continued investment made by Domino's into rapid fulfillment via their speed-based delivery guarantee provided them with a benchmark as to how other businesses compare and have led to significant changes across many industries. The impact of Domino's entry into India has dramatically affected the landscape of food-service delivery in that country.

At the same time, the growth of ride-hailing services like Uber & Ola offered a variety of key technologies. These included on-demand ordering, real-time tracking, dynamically routed journeys, improved fleet management, and scalable operational models. App-based ride-hailing services changed the way we transport ourselves within cities by innovating dynamically priced rides, better matched drivers and passengers, and sharing of rides. The convergence of Domino's early institutionalization of speed and efficiency with the technological and scalable frameworks pioneered by ride-hailing firms provided the foundational architecture for contemporary Q-Commerce. This synthesis established the core principles of speed, transparency, and efficiency that are now essential for meeting elevated consumer expectations in the modern delivery ecosystem.

To summarize, Q-Commerce is based on the already utilized technology of rapid and reliable delivery in urban areas. Like ride-hailing services, Q-Com originated from this technology-enabled delivery service and has continued to be a source of influence for today's delivery industry, including the legacy of creating speed and positive user experiences.

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