How Late Entrants Survive in a Market with a Dominant Firm: A Case Study of JD Takeaway in Chengdu

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Extended Abstract. Late entrants in two-sided platform markets often achieve rapid adoption through discounts and promotion, yet struggle to retain users once those incentives weaken. This study investigates that problem through a system dynamics model of JD Takeaway's entry into the Chengdu online food-delivery market. The model links user diffusion, platform attractiveness, rider supply, rider attractiveness, and delivery performance, allowing demand-side and supply-side policies to be compared over time. The base simulation reproduces a pattern of fast initial user growth followed by a sharp decline. Increasing advertising or extending coupon duration raises the early user peak but does not materially change the long-run trajectory. In contrast, rider subsidies have a more durable effect because higher rider income attracts riders, lowers workload per rider, improves delivery reliability, and increases platform attractiveness to users. The results suggest that late entrants should treat operational capacity as a strategic complement to customer acquisition: price-based entry can create trial, but sustainable growth requires a supply side capable of serving the users that promotion brings in.

Keywords: system dynamics; two-sided platforms; late entry; food delivery; rider subsidies; platform attractiveness; user retention

1. Background and Research Objective

Digital platform markets create a difficult environment for late entrants because incumbent firms already benefit from established user bases, operational resources, and self-reinforcing network effects [1], [2]. A new platform may temporarily offset these disadvantages with aggressive promotion, but growth driven mainly by price incentives can be fragile. The central managerial problem is therefore not only how to acquire users, but how to retain them after the initial promotional period.

JD Takeaway provides a useful case for examining this transition. Its market entry was accompanied by substantial user subsidies and rapid early adoption, while the longer-term challenge was to convert trial into stable usage. This study asks: how do user adoption, rider supply, delivery performance, and platform attractiveness interact after entry, and which policies are most capable of supporting sustained growth? The analysis focuses on Chengdu and uses the case as a model-based explanation of late-entry dynamics rather than as a point forecast of exact future market shares.

2. Model and Method

A system dynamics approach is used because the problem involves feedback, switching, delays, and nonlinear responses over time [3], [4]. The model contains four connected sectors. First, the user-diffusion sector represents users switching between JD and a dominant competitor; entry into JD is influenced by advertising and imitation, while users can later switch back. Second, the platform-attractiveness sector compares the two platforms on price and delivery performance. Coupons improve JD's relative price temporarily, whereas delivery time reflects service quality and operating capacity.

Third, the delivery-rider sector represents riders switching between the two platforms. The total rider pool is held fixed within the model boundary, so changes in JD's rider supply arise from competitive switching rather than from growth of the entire labor market. Fourth, the rider-attractiveness sector links rider income and workload to platform choice. When orders grow faster than rider capacity, workload per rider rises and delivery performance deteriorates; when rider supply increases, orders are distributed across more riders and service becomes more reliable. This creates a feedback path from rider policy to rider supply, from rider supply to delivery performance, and from delivery performance to user retention.

The model compares a base run with four policy families: stronger advertising, longer coupon duration, rider subsidies, and combined policies. Advertising and coupons primarily act on the demand side, while rider subsidies operate through the supply side by improving rider income and platform attractiveness. The scenarios are evaluated by the trajectory of active JD users and by changes in JD's relative attractiveness to users and riders.

3. Results

The base run shows a pronounced boom-and-decline pattern. JD active users increase rapidly after entry, but the peak is temporary; as the early price advantage weakens and user switching continues, the active user base falls and stabilizes at a much lower level. JD's relative attractiveness to users follows a similar pattern. The simulation therefore reproduces the core problem faced by a promotion-led entrant: acquisition can be fast while retention remains weak.

Demand-side policies improve this early phase without fundamentally changing the long-run outcome. Increasing advertising raises the initial user peak, but its effect fades as the remaining pool of users to attract shrinks and existing JD users leave. Extending coupon duration keeps JD cheaper for longer and slows the decline, yet the effect again weakens when the coupon period ends. These scenarios indicate that advertising and discounts can delay or soften user loss, but they do not repair the operational mechanisms that make continued use attractive.

Rider subsidies produce a more persistent response. Higher rider income makes JD more attractive to riders, which increases rider supply on the platform. With more riders sharing the order load, workload per rider falls and delivery

becomes faster and more reliable. Better service improves JD's attractiveness to users, supporting both retention and renewed adoption. Combined-policy scenarios reinforce the same result: early promotion can help generate an initial user base, but the supply-side intervention becomes increasingly important once the promotional advantage starts to fade. Timing also matters; policies introduced early have greater leverage because they act before large-scale user exit has occurred.

Table 1. Policy comparison from the simulation

Policy	Primary mechanism	Early effect	Long-run implication
Advertising boost	Raises awareness and inflow	Higher user peak	Effect fades; does not solve retention
Longer coupons	Extends price advantage	Slower user decline	Benefit weakens when coupons end
Rider subsidy	Raises rider income and rider supply	Improves service capacity	More durable user retention through better delivery
Combined policy	Links acquisition with supply support	Strong initial adoption	Most effective when supply-side support starts early

4. Implications, Limitations, and Conclusion

The main implication is that late entrants should not treat customer acquisition and operational capacity as separate problems. In a two-sided delivery platform, rapid user acquisition can itself create service pressure if the rider side does not scale with demand. A strategy centered only on discounts may therefore contain the mechanism of its own failure: promotion raises orders, rider workload increases, delivery quality deteriorates, and the resulting loss of attractiveness undermines retention. Supply-side investment can interrupt this reinforcing decline by improving the service experienced by users.

The model is deliberately simplified. It assumes fixed populations of users and riders within the modeled system, represents platform attractiveness mainly through price and delivery time, and does not include merchant variety, brand trust, delivery-algorithm improvements, or the long-run financial cost of subsidies. The Chengdu calibration also limits direct generalization to other cities and platform markets. The results should therefore be interpreted as an explanation of dynamic mechanisms rather than as precise predictions.

Within these limits, the study provides a clear strategic conclusion. Promotion is useful for market entry, but it is not sufficient for sustainable growth in a market dominated by a strong incumbent. For JD Takeaway, rider subsidies outperform purely demand-side policies because they strengthen the operational side of the platform and improve the service conditions required for users to stay. More generally, late entrants in two-sided service platforms need to convert temporary demand creation into durable service capability if they are to establish a stable long-term position.

Selected References

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