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Disintermediation in Two-Sided Marketplaces

Two-sided marketplaces often risk *disintermediation*: Users may rely on the marketplace to find each other, but then perform related future transactions—or even the current transaction—without the platform's involvement and without paying any fees the platform may charge. Disintermediation reduces data collected by marketplaces, impedes a marketplace's ability to impose rules and provide oversight, and generally lessens marketplace control. Most of all, disintermediation reduces a marketplace's revenue and may even make an otherwise-viable marketplace non-viable. Marketplace operators therefore try to adjust their services, rules, and incentives in order to discourage disintermediation.

Consider the effects of disintermediation as they might apply to transportation-dispatch service Uber. Matching users looking for transportation with private drivers, Uber allows a user to request a ride using a smartphone application. Uber facilitates payment for the driver's service while retaining a portion of the passenger's payment (usually about 20%). This fee invites strategic behavior: Once the driver and passenger meet, they can exchange contact information and arrange future rides without using Uber and paying the platform fee. In principle, they could even declare the current ride "canceled," and the passenger could pay the driver directly. Despite the possibility of such schemes, as of 2016, the problem seems to be unusual. Indeed, investors found Uber's approach sufficiently meritorious to support a $62.5 billion valuation as of December 2015. Why had users and drivers not paired off to leave Uber's platform in large numbers? What prevented marketplace disintermediation at Uber?

Uber benefited significantly from the unpredictability of user needs. For riders who require regular trips between the same two locations at a set frequency, it could be attractive to circumvent Uber's platform and fees via a direct agreement with a driver. But most riders use Uber for ad hoc transportation, and they would typically prefer to hail the closest available driver. In addition, while drivers provide rides of somewhat differing quality, the differences are usually not large enough for a rider to expend extra effort to stick with the same driver. These characteristics of market requirements importantly protected Uber from disintermediation.

But other two-sided marketplaces faced far greater risks of disintermediation. Having hired a housekeeper via a service such as Handy or Homejoy, a customer would ordinarily prefer periodic future service from that same worker. Continuing with a single worker would let both customer and worker avoid further platform fees. Furthermore, continuing an established relationship lets a customer retain a known or trusted worker, a valuable benefit in light of perceived variance in quality. In addition, continuing a relationship gives both customer and worker the ongoing benefit of

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any learning received on the job (such as where a customer keeps certain supplies or a customer's preference for a certain style of work). As a result, customers and workers have every reason to attempt disintermediation. From the platform's perspective, however, disintermediation produces a clear harm: It would no longer receive 20% of a near-perpetual stream of visits, but rather 20% of a worker's first billing to a given customer. The same incentive arises in freelance platforms such as TaskRabbit, Upwork, or Thumbtack, where a customer might similarly hire a worker directly, and similarly for short-term accommodation marketplaces such as Airbnb and Homeaway, where a guest might pay the host directly rather than book via a platform. Analogous concerns stretch to some of the web's largest and best-established marketplaces. Why should a seller pay fees to Amazon or eBay, or a hotel pay fees to Expedia or Booking.com, when a customer could use those platforms to find the provider, and then book directly? Each platform thus faces a risk of disintermediation.

Types of Disintermediation

Disintermediation can arise in two distinct contexts, for related but separate reasons. We consider each in turn.

Disintermediation for the Current Transaction

When a marketplace's matchmaking function connects two parties, they may choose to leave the platform to complete the transaction, including contracting and payment. In this case, the platform is unable to charge fees for the transaction, and the platform usually does not even receive reliable information about what occurred.

For example, once a rider gets into a car ordered through Uber, the rider could cancel the Uber and pay the driver directly instead. Similarly, if a buyer uses Amazon Marketplace to find a product sold by a third-party seller, the buyer could contact the vendor and agree to pay directly. A direct purchase would let the seller avoid Amazon's fee, and the seller could pass a portion of the savings back to the buyer.

A platform is susceptible to disintermediation for the current transaction when the buyer and seller perceive matchmaking to be the platform's main source of value, and when they see little value in any auxiliary services. The larger the value of the current transaction, the greater the parties' incentive to circumvent the marketplace and its fees. For example, when booking a weeklong Airbnb stay in a high-priced city, the platform's fee could easily reach several hundred dollars, giving the guest and host a natural incentive to do business directly.

Disintermediation for Subsequent Transactions

Parties may elect to complete the current transaction through a platform, but later conduct additional transactions with each other outside of the platform. This approach is particularly likely if the nature of the service invites a buyer to continue with a single-service provider. For example, a homeowner might find a housecleaner through Handy and pay for the first cleaning through that marketplace, but later contact the same housecleaner without using Handy. Using this strategy, the customer would pay a lower price for future visits, and the cleaner and customer would split the savings from circumventing Handy's fees.

When facing disintermediation for subsequent transactions, a marketplace is still able to capture value on the first transaction between each pair of parties, but there are far fewer repeat transactions, which the marketplace perceives as "churn." This effect is most harmful to marketplaces where a customer's lifetime value results primarily from the prospect of repeat transactions. For example, Handy's cost to acquire a new customer is sufficiently high that it needs multiple cleanings to generate a profit from that customer.

Assessing the Risk of Disintermediation

Though most platforms should anticipate some disintermediation, the challenge looms particularly large when a marketplace exhibits certain features. Disintermediation on the current transaction becomes a more urgent concern when the market has either of the following conditions:

- Communication required between customer and supplier before the transaction. Complicated purchases necessitate back-and-forth discussion to ensure a good match. For example, an Airbnb guest often has idiosyncratic questions about a property. Similarly, at Upwork, a customer needing custom software typically needs several messages to discuss requirements and developer capabilities.

  When the buyer and seller communicate at length before finalizing a transaction, they have more opportunities to suggest taking the transaction off the platform. Some marketplaces try to limit free-form communication by posting supplier capabilities in structured form, creating scheduling tools, or pre-answering frequently asked questions. Nonetheless, some communication remains inevitable for many platforms. It is difficult to imagine a freelance developer on Upwork committing to do custom software design work, nor a customer committing to pay, without some back-and-forth discussion freed from the confines of a template.

- Low multi-homing costs or feasibility of direct purchase. Buyers and suppliers may choose to multi-home (use multiple platforms), if that is neither costly nor time intensive. For example, someone selling electronics may post items on both Amazon and eBay, since posting is free. Sophisticated buyers may then find it advantageous to check both sites, choosing whichever platform offers a lower price. As a result, even if a given platform was in fact the first to alert a given buyer to the existence and offer of a given supplier, the transaction may nonetheless take place on a different platform.

  Suppliers and buyers may also be willing to complete transactions directly, not via a platform, if they perceive limited benefits to finishing the transaction through a platform.

Similarly, certain characteristics make disintermediation on subsequent transactions a particular concern:

- Customer lifetime value that relies on repeat transactions. If the marketplace has high churn rates and sellers frequently acquire new customers, then disintermediation on subsequent transactions is a less important concern because the marketplace can provide ongoing lead generation for sellers. However, if sellers rely on high repeat-purchase rates, then the marketplaces must either remain relevant after the initial match or alternatively capture the full lifetime value of the relationship early on.

- Fixed customer requirements. When a buyer needs the same service repeatedly, and a seller can provide it repeatedly, it is natural for them to do business directly. Consider a customer who needs multiple software programs built in the same environment, tasks preferably done by the same engineer. Consider a guest who makes repeated visits to a single city, calling for repeated short-term rentals in that city.

In contrast, if the customer's requirements vary in respects relevant to the match with sellers, the customer is more likely to need a new seller in each instance, such as varying software developers for distinct projects or varying hosts for short-term rentals.

Even when the customer's core requirement remains fundamentally similar, the dynamics of the buyer-seller match may make different providers distinctively suitable. For example, a passenger may need a series of rides across town. Though the rides may be similar in the required skills and equipment, driver availability and location vary. As a result, any single driver is unlikely to be a good fit, preserving the value created by a service like Uber. Other on-demand services, such as Doordash, Postmates, and TaskRabbit, similarly assure marketplace value through customers' time-sensitive requirements and workers' unpredictable availability.

Unusual and diverse customer requirements form a further barrier to disintermediation. Consider buyers seeking second-hand clothing on ThredUP. Buyers' specific requirements on size and style limit potential matches, and buyers therefore depend on ThredUP's matchmaking service to locate suitable sellers. Furthermore, most buyers look for different products each time they shop, so they continue to need ThredUP even for subsequent purchases. The same is true for purchases on eBay or Amazon Marketplace, where a customer is likely to seek different products, typically from different sellers, in each transaction. The unpredictability of customer requirements makes it less likely that buyers and sellers can circumvent these platforms.

- Heterogeneous suppliers. When sellers vary in quality, a buyer satisfied with a particular seller has a natural incentive to transact with that seller directly, circumventing a marketplace. Consider a customer who previously contracted with a freelance software engineer via the Upwork marketplace. If the customer was satisfied with the work, the customer has every incentive to contact that engineer directly for future similar projects, without going through Upwork or paying further marketplace fees.

  In contrast, a marketplace is more likely to be a useful forum for buyers to find future sellers when sellers are viewed as similar. For example, passengers may view Uber drivers as largely interchangeable, and customers may have a similar assessment of Doordash delivery drivers. Those platforms thus provide a natural mechanism for users to find a worker suitable for a required task, drawing on the platform's information to find an available worker in an appropriate location.

Platforms exhibiting these characteristics should anticipate certain amounts of disintermediation, and they should plan customer acquisition and project customer lifetime value accordingly. They may also consider some of the strategies to combat disintermediation outlined below.

Strategies to Combat Disintermediation

We now turn to strategies for platforms susceptible to disintermediation, both for the current transaction and for repeat transactions:

Detect and Block Attempts at Disintermediation

Electronic marketplaces can often detect buyers and sellers that are attempting disintermediation, and can sometimes block such efforts. For example, Amazon Marketplace prohibits sellers from including e-mail addresses or external hyperlinks in their listings. Similarly, eBay disallows external links on seller pages. Using these methods, the marketplaces can keep communications on platform channels, preventing links to external purchase channels to circumvent the platform.

As mentioned above, it is more difficult for platforms to block disintermediation when buyers and sellers communicate before finalizing a transaction and tendering payment. Such communication may sometimes be required when the buyer and seller must meet in person to complete the transaction, as in the case of Uber. However, Uber deactivates drivers that have high cancellation rates, a threat that prevents drivers from canceling Uber matches and negotiating a lower rate privately. Airbnb's approach is somewhat different, because pre-booking communication is routine: guests and hosts often discuss requirements and property characteristics at length before booking. To discourage disintermediation, Airbnb only reveals a guest's genuine contact information to a host, and vice versa, after the guest pays for the stay through Airbnb's platform. Before that, Airbnb guests and hosts can communicate only via a message-forwarding system Airbnb provides. Crucially, Airbnb scans all such messages for e-mail addresses and phone numbers, blocking apparent attempts to circumvent Airbnb's platform.

Usually a marketplace prefers to block disintermediation in the moment, as the parties are preparing to circumvent the marketplace. Airbnb's blocking of e-mail addresses and phone numbers typifies this tactic. But when a platform infers disintermediation from a pattern of behavior, such as an Uber driver with high cancellation rates, the platform's only remedy is a sanction after the fact. Such sanctions are most often applied to sellers because, in most markets, sellers conduct multiple transactions on the platform and thus lose more from exclusion. A sanction or exclusion is less effective if neither party anticipates returning to the marketplace in the foreseeable future or perhaps at all, as in a market for marriage or for purchasing residential real estate. On these platforms, marketplaces typically do better to impose their rules at the outset (e.g., collecting all fees up-front), anticipating that they will have little ability to collect fees or impose penalties after the fact.

Relatedly, if parties can easily create new accounts, it is difficult for a platform to impose a penalty, as the parties can simply ignore the sanction and create new accounts.[1] Of course, this vulnerability extends beyond disintermediation, as similar challenges arise for any behavior a platform seeks to sanction.

Provide Additional Services Contingent on Full Use of the Platform

Some marketplaces discourage disintermediation by providing benefits only when users finish a transaction through the platform. Electronic payments are a natural benefit; buyers need to pay sellers, and a marketplace can provide an internal payment service (or integrate an existing service) preset with the payment card information, destination, amount, and description. An Uber driver trying to circumvent that platform would need to accept cash, make change, and hope passengers had cash on hand—enough complexity to offset much of the savings from avoiding Uber's fee. For the larger amounts at Airbnb, cash would probably be unsuitable, so a host would need to obtain a credit card merchant account and processing terminal (with additional costs) or accept checks (facing a risk of dishonored checks as well as further impediments from international guests).

For sellers providing physical goods, shipping assistance can also offset some of a platform's fees and discourage disintermediation. For example, Amazon allows Marketplace sellers to place goods in

Amazon fulfillment centers, which in turn allows Marketplace sellers to offer "Fulfillment by Amazon" with two-day shipping at a lower cost than most sellers could achieve on their own. Similarly, eBay consolidates batches of packages destined for the same international destination, allowing sellers to offer international shipping at a cost barely higher than domestic postage. For domestic shipments, eBay provides sellers with significant discounts from preferred handlers. A seller circumventing either platform would forfeit all of these benefits.

Relatedly, many marketplaces offer guarantees that are contingent on a buyer purchasing through the platform. For example, eBay provides dispute resolution, guarantees, and refunds when sellers do not ship goods or items are not as described. Airbnb protects hosts from guests damaging their homes and certain property. Uber provides its own insurance for injury to passengers, for liability to other drivers, and even for damage to drivers' own vehicles, because drivers' ordinary personal insurance policies are unlikely to cover losses incurred while driving for Uber. Parties who had circumvented a platform could not reasonably expect assistance from the platform if something went awry; the platform's records would reflect that no transaction had occurred, and we know of no platform that provides a guarantee or similar assistance in such circumstances.

These guarantees add benefits that individual sellers would typically struggle to provide on their own. An individual eBay seller would struggle to assure a skeptical buyer that merchandise will be as described; buyers might worry about account hacking, counterfeit merchandise, or other problems not captured in other buyers' reviews. Similarly, a concerned Airbnb guest might worry that a host doesn't actually have the right to provide the property shown in photos, or that the property is otherwise not as described. If the guest is planning to pay cash on arrival, a host's failure still causes harm because alternatives might be difficult to find or more costly. In each case, a market's comprehensive guarantee provides a better alternative that many buyers may be willing to pay for. Moreover, in these and other contexts, timid buyers may perceive difficulty mediating a dispute with a hostile seller. Buyers may find it more palatable to resolve disputes via the professional staff of an impartial platform.

Propose an Ethical Principle Against Disintermediation

Marketplaces often seek to discourage disintermediation by framing it as ethically improper. Typically, this approach begins by alerting buyers and sellers to the risks they will face in circumventing the platform. For example, eBay tells buyers that "you can't offer to buy items outside of eBay." eBay continues: "If you buy items outside of eBay, we don't protect you against fraud."[2] After noting the risks of fraud and absence of guarantees and buyer-protection programs for off-site transactions, eBay calls off-platform purchases an "unfair" "attempt to avoid eBay fees," noting the way such purchases can distort competition among sellers.[3] Etsy, an online marketplace for handmade goods, frames disintermediation as "fee avoidance" equivalent to not paying Etsy's monthly fee for service.[4] Airbnb notes that paying outside its site could be a sign of one of several "common scams" that harm hosts directly in addition to reducing Airbnb's revenue.[5]

Charge Up-Front Fees

Some marketplaces charge up-front fees before providing access to their platform. Such marketplaces need not worry about the prospect of disintermediation, as value is extracted at the outset. For example, the Monster.com job-listing service charges a fee for recruiters and employers to post jobs. The same fee is due whether the employer hires a candidate via Monster, hires a candidate via some other service, or hires no one at all. Similarly, the dating website eHarmony charges a monthly membership fee which entitles a member to virtually unlimited use of the platform.

Thumbtack charges professionals for each customer they contact, collecting its entire fee up-front and embracing the possibility that professionals will then communicate directly with customers without further payment to Thumbtack. These mechanisms protect the marketplaces from the risk of disintermediation. These approaches also eliminate the need for marketplaces and users to track the source of each lead or match.

Nonetheless, up-front fees have important downsides. For one, up-front fees require that users be confident in a platform's value. Consider a cleaner thinking about joining Handy. At a commission of, say, 20% on a $50 cleaning service, the cleaner perceives minimal risk in the leads Handy provides; each sale is at least positive in an accounting sense. But suppose Handy were instead to project an average of 10 visits for each customer it matches with a cleaner, and sought to be paid in full up-front to reduce its risk of disintermediation. Then a cleaner would be asked to pay $100 of commission on a customer's initial $50 purchase. Cleaners would find this unpalatable and would be particularly angry if many customers did not return for further services. Indeed, if relying on up-front pricing, platforms probably could not subsidize customers through discounts on their first transaction; such promotions would distinctively attract users less likely to buy further services at full price, further exacerbating tensions between the platform and service providers. In this way, up-front pricing would block the promotional method most widely used by such platforms.

More generally, a user uncertain about the platform's value has every reason to hesitate to pay up-front. This problem is further exacerbated if a user is considering *multi-homing* by using other platforms, and if other platforms have already proven their benefits or have adopted a pay-as-you-go pricing strategy without significant up-front payments.

Furthermore, up-front fees may facilitate several types of opportunistic behavior. For one, a platform that receives up-front fees has limited incentives to impress users with top-quality performance. Better quality will improve the platform's reputation and perhaps facilitate future activity or renewals, but dulled incentives could reduce a platform's quality. Meanwhile, with no additional fee for unlimited usage, heavy users may find it advantageous to share accounts. Consider a company needing to hire many people for the same job description. That company might be able to post a single Monster.com listing, paying the platform's fee only once, but hiring multiple candidates.

Reduce Platform Fees

Usually, buyers and sellers consider attempting to disintermediate a marketplace in order to avoid its fees. The incentive to disintermediate is thus reduced if a marketplace lowers its fees.

In the extreme, a platform might remove its fees entirely. For example, Craigslist charges fees for two categories in six cities, but in dozens of other categories and in 700 other cities, Craigslist is completely free. Fees thus provide little incentive for buyers and sellers to leave Craigslist.

Use Price Coherence to Discourage Alternative Purchase Channels

If buyers and sellers are able to coordinate and apportion costs between them, they may be indifferent to fees imposed on the one side versus the other. For example, a customer might be willing to pay $100 for a home cleaning, anticipating that Handy keeps $20 and pays $80 to a cleaner. But the customer might recognize that it is interchangeable for the buyer to pay $80 to the cleaner plus a separate $20 booking fee to Handy. In such markets, a fee on *either* side may prompt disintermediation as the parties find an alternative that reduces joint costs and allows an adjustment to price to make both parties better off.

But when a platform implements *price coherence*, in which the price through a platform is not more than the price of a direct purchase or through any other platform, buyers have no incentive to disintermediate the platform.[6] For example, hotel booking marketplaces widely disallow hotels from offering lower prices through their own sites or through competing marketplaces. A hotel might want to encourage travelers to book directly or through low-fee marketplaces, but price-coherence restrictions rule out this possibility. As a result, the traveler sees no potential savings from disintermediation, and the traveler is likely to book through whatever marketplace seems most convenient.

Similar incentives extend to web search. Consider a buyer seeking to make a purchase from a seller who is a Google AdWords advertiser. Having found the seller via Google search, the buyer could quickly and easily click the seller's listing to reach the seller's site. A sophisticated buyer might recognize the high cost these clicks impose on sellers—for some sellers, reaching half of gross margin or even more. Nonetheless, the buyer will struggle to find a way to claim a portion of the seller's savings from foregone advertising expense. One might imagine a seller offering a discount to buyers who do not click advertisements, but Google would probably penalize any site that charged more to users who click ads. As a result, sellers charge the same price to users who come directly versus users who click Google ads, so users see no upside to bypassing Google ads by visiting merchants directly; any such effort would offer only inconvenience but not savings. Despite significant fees to sellers, Google's approach thus convinces buyers to treat the company's service as free of charge, eliminating their incentive to attempt disintermediation.

Focus on the Use Cases Least Amenable to Disintermediation

In some markets, a customer's requirements may combine fixed and shifting components, both risking and avoiding disintermediation. For example, a guest may travel to the same city repeatedly, readily re-contacting a prior host to disintermediate the Airbnb booking platform on return visits. But when the guest later travels elsewhere or when the known host's property is already booked, the booking platform can continue to add value. Similarly, after using the Thumbtack platform to select, say, a plumber, a homeowner can easily contact the worker directly for future such work. Nonetheless, the customer will need to return the platform—and platform fees will be paid—when the customer seeks some other type of service provider in the future.

When customers combine fixed and shifting requirements, a marketplace may need to adjust its expectations and projections. To the extent that buyers' requirements remain fixed, it may be unrealistic for a marketplace to expect to charge a fee for each such transaction. But marketplaces could encourage buyers to try new aspects of a service—for example, using Thumbtack to hire a painter some months after hiring a plumber. Marketplaces could also offer reduced fees for further transactions between the same parties. For example, when a marketplace reconnects a buyer and seller who have already done business with each other, the marketplace's fee could be reduced to avoid seeking further payment for the marketplace's matchmaking benefit, which was already fully paid for on a prior transaction. Nonetheless, the marketplace could continue to charge for the additional services it provides on each transaction, including credit card processing, insurance, and the like.

Tabulation of Strategies

The following table assesses which strategies of preventing disintermediation are most relevant to alternative types of disintermediation.

	Prevent disintermediation for the current transaction	**Prevent disintermediation for subsequent transactions**
Detect and block attempts at disintermediation	●	
Provide additional services contingent on full use of the platform:		
Transaction facilitation services (such as shipping and payment processing)	●	●
Trust and guarantees (such as return policy, insurance, and reviews)	●	○
Propose an ethical principle against disintermediation	●	●
Charge up-front fees		
Charge up-front fees before contact (such as fees for membership, messaging, posting)	●	●
Capture full lifetime value of relationship in first transaction through the platform	○	●
Reduce platform fees	●	●
Use price coherence to discourage alternative purchase channels	●	●
Focus on the use cases least amenable to disintermediation	○	●

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