

# The Battle for the Analog Last Mile

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The “battle for the last mile” is one of the most closely watched competitive races in the communications business. Cable and telecom firms are racing to own the broadband pipeline into 100 million American homes. The winner of the last mile race will earn the right to deliver a variety of communication services into the home, and will create a valuable information franchise.

But there is another battle looming on the horizon that has received far less attention. This is the battle for the *analog last mile* – the race to deliver products and services to the home. While the information flows through digital pipes, physical products still need to be delivered, and physical services still need to be performed. The more consumers use the Internet for online shopping, the more the traffic of “atoms” that has to be delivered into the home. This race to own the analog delivery and fulfillment pipeline into the home is beginning to heat up, with some interesting new players emerging on the radar.

What are the analog pipelines into the home? What is the “last mile” problem for these analog pipelines? What are the strategies for solving the last mile problem? Who are the contenders for the fulfillment and services portals? What are their strategies? And who will be the likely winners and losers?

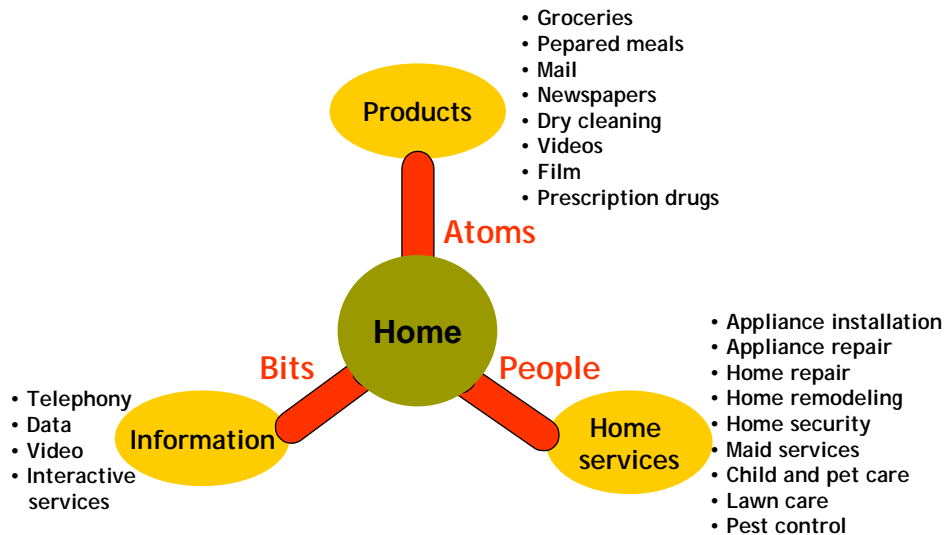
## ***The three pipes into the home***

Besides the digital pipe that delivers information (bits) into the home, there are two potential analog “pipes” into the home (see Figure 1).

The first analog pipe will deliver *products* (atoms) to the home. The product pipeline is the “fulfillment portal” that delivers the “atoms of E-commerce” to the home. The categories that the fulfillment portal aggregates may include groceries, prescription drugs, film, videos, dry cleaning, prepared meals, along with the mail and newspapers. The incumbents in the battle for the “fulfillment portal” are the U.S. Postal Service and the third-party logistics carriers – UPS, DHL, and Federal Express. The challengers are full-service fulfillment firms like Peapod, WebVan, and Streamline.

The second analog pipe will deliver *services* performed by people to the home. These services may include home cleaning, appliance installation, appliance maintenance and repair, lawn and garden care, pest control, home repair, home remodeling, childcare, senior care, and pet care. These services are currently performed by a number of fragmented service providers. These fragmented service providers can be aggregated into a “home services portal”. The last mile problem in the services pipeline case arises from the fact that service providers are often local mom-and-pop companies that lack the scale and reputation of national players. The incumbents in the battle for the services portal are payers with large home services operations – Sears, Service Master, as well as the local cable and telecom companies. The challengers include a number of players who can leverage specific services relationships with home owners – realtors (home buying relationship) Radio Shack (electronics installation and repair relationship), as well as small startups like iMandi that are serving as virtual aggregators of services, with the fulfillment being outsourced to third parties.

## The three pipelines into the home



### **Strategies for solving the analog last mile problem for products**

The analog last mile problem for physical products results from a disaggregation of bulk, when consumers have products delivered to individual homes. Therefore, the strategies for addressing the last mile problem revolve around a reaggregation of atoms in different ways. These strategies have interesting parallels with the digital last mile problem, so I will describe them in terms of their digital counterparts:

- The caching strategy
- The analog set-top box strategy
- The POTS strategy
- The high-bandwidth strategy
- The overbuild strategy

The *caching strategy* involves aggregating bulk across households at local collection centers, just as @Home relies on caching of information in local hubs, to reduce traffic on its network. While this has not happened yet, one might imagine that a household's groceries, dry cleaning, and prepared meals could be deposited every day in a convenient collection center, for drive-by pickups. These collection centers could be created in local convenience stores, gas stations, office buildings, or even in local grocery stores. Besides aggregating bulk, the collection centers would be more convenient than home delivery, because there would be no need for attended delivery.

The *analog set-top box strategy* relies on aggregating bulk across categories for a home to achieve economies of scope. Players like Boston-based Streamline

([www.streamline.com](http://www.streamline.com)) are installing physical boxes in garages, to drop off groceries, videos, film, and prescription drugs. These boxes will include a refrigerated compartment for perishables, and will be accessible only to authorized delivery workers. The set-top box strategy is different in one important way from conventional home-delivery grocery services like Peapod ([www.peapod.com](http://www.peapod.com)) and HomeGrocer ([www.homegrocer.com](http://www.homegrocer.com)), in that the “analog set-top box” allows for unattended delivery, thus reducing the pressure to deliver within a specific time window. However, it has important drawbacks, including significant capital costs of installing the boxes, and the mismatches between the delivery cycles for different product categories like film and dry-cleaning. To make matters worse, Moore’s law is not of much help in reducing the cost of analog set-top boxes over time.

The *POTS strategy* is a pragmatic strategy that relies on using the existing fulfillment infrastructure to deliver specific products to the home. This strategy relies on a careful selection of product categories that are logistically efficient, in terms of dollars per unit weight, and dollars per unit volume. It also relies on selection of product categories or product variety that are not easily or conveniently available at local stores. For instance, DrugStore.com, MyPharmacy.com and PlanetRx.com focus on prescription drugs, while HotHotHot.com and NetFlix.com focus on providing a vast variety of products within their category (hot sauces and movies, respectively). This strategy has the obvious benefit of not requiring new fulfillment infrastructure, but it also suffers from the drawback of not being able to optimize the infrastructure for specific categories or end-use applications.

The *high-bandwidth strategy* relies on speedy delivery of products, within a 30-minute window. The strategy was invented by Dominos Pizza, with their promise of 30-minute delivery, guaranteed. An interesting startup firm called PinkDot ([www.pinkdot.com](http://www.pinkdot.com)) is using this idea to create a “Dominos meets 7-11 Stores”. PinkDot will deliver a reasonably wide selection of products within 30 minutes of placing the order, guaranteed. While the costs will inevitably be higher, PinkDot feels that the speed of fulfillment will compensate for the higher cost. This strategy has its advantages for “emergency” purchases of convenience products, and will likely eat into the sales of convenience stores and fast food places. However, the economics are somewhat dubious, because the order sizes are likely to be small, and maintaining service quality levels will be a challenging task, especially in congested urban areas.

The *overbuild strategy* is the most ambitious, the most risky, and potentially the most revolutionary approach to the last mile problem. Just as Competitive Local Exchange Carriers (CLECs) are laying new fiber and creating entirely new digital pipes into the home, players like WebVan aim to create state-of-the-art highly automated warehouses and fulfillment networks from scratch. WebVan is building the first of its warehouses in the Bay Area, and plans to expand across the country. It has attracted \$120 million in seed funding from top-flight VC firms, indicating that this could be a huge bet to reinvent fulfillment to the home. Peapod is also responding by creating strategically located warehouses in Chicago, San Francisco, and Long Island, NY. The risks of an “analog overbuild” are evident – the capital costs are huge, and it is not clear that scale goes hand in hand with customer intimacy at the delivery end.

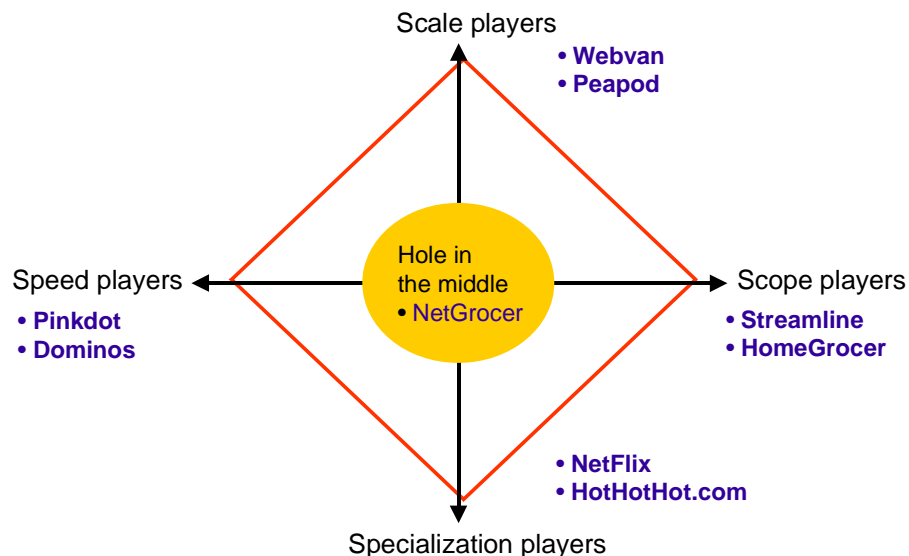
### ***Evaluating the strategies***

The strategies outlined above are dramatically different in terms of the approach they take to solving the last mile problem for products, and therefore in terms of the

competencies they demand. The overbuild strategy focuses on *scale* as the basis for competitive advantage, under the assumption that increasing scale will lead to efficiencies in purchasing and warehousing. The POTS strategy focuses on *specialization* as the basis for competitive advantage. It rests on the assumption that specialized categories can be piped through existing analog pipelines (UPS, Fed Ex), and that limiting the focus to these categories effectively solves the last mile problem. The set-top box strategy relies on *scope* as the basis for competitive advantage, arguing that an expansion in the scope of products delivered to the home will overcome the costs of installing delivery boxes into the home. And the high-bandwidth strategy relies on *speed*, under the assumption that people will pay extra for convenience and speed of fulfillment. These different approaches are contrasted in Figure 2 below.

In light of the fact that the different players are adopting very different approaches, there will be no clear winners and losers in the “fulfillment portal” race. Rather, the different approaches will work well within specific categories, specific buying situations, and for specific types of consumers. It is these contextual factors that determine the service outputs that consumers will demand from the fulfillment providers – speed, convenience, selection, price, service, information, quality, etc. The important lesson for each player is to be very clear about the segments they serve, the service outputs they provide, and hence the scope of products and services that they should provide. The danger is to be “Everything to everybody” – this is the “hole in the middle” that players like NetGrocer are falling into. So the different players will need to migrate to different edges of the diamond – scale, speed, specialization, or scope.

## Analog last mile contenders - products



### **Strategies for solving the analog last mile problem for services**

The analog last mile problem for services is qualitatively different from the analog last mile for products. Products are delivered to the home, while services are performed by

*people* inside, outside, or on the home. While product quality can be standardized and products can be shipped nationally or globally, service quality is inherently variable, and home service providers tend to be neighborhood or community-based. The three fundamental issues that “service last mile contenders” need to address are:

- Certification
- Scale
- Fragmentation

The certification problem arises from the fact that small mom-and-pop service providers have no reputation and no brand equity. Operating largely through referrals and word-of-mouth, they find it difficult to create a brand name that can stand as an assurance of quality. This problem can be overcome by a national branded player like Sears or Radio Shack taking on the customer relationship management role, and standing behind the work of sub-contractors.

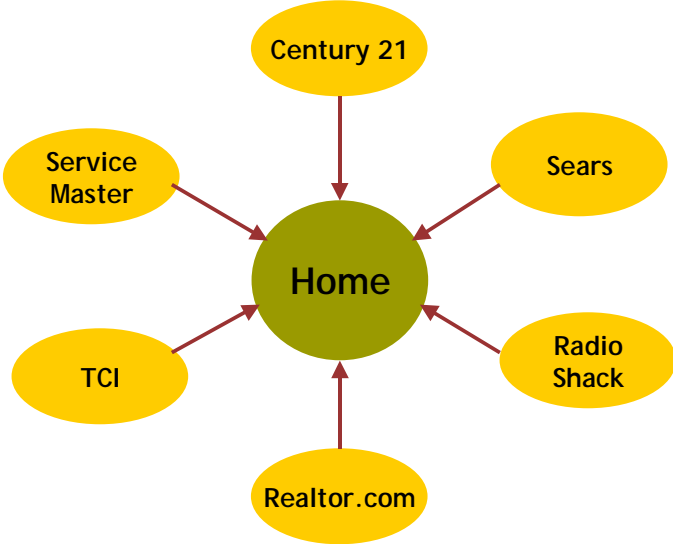
The scale problem is related to the intensely local nature of home services. People often will limit their selection of service providers to their neighborhood. This makes it difficult for service providers to create economies of scale. This presents an interesting opportunity for demand aggregation, where an aggregator can collect orders for services like plumbing, electrical repair, HVAC, appliance installation etc. from individual households, and negotiate with service providers for bulk discounts. This demand aggregation creates value for service providers by lowering their customer acquisition costs, and for consumers by lowering their cost of services.

The fragmentation problem arises from the fact that several overlapping service providers may be coming into the home to perform related services, thereby requiring the homeowner to repeatedly incur the fixed cost of the service provider walking into the home. For instance, the appliance installation may be done by one service provider, while appliance repair may be done by another. Lawn care may be performed by one agency, while pest control may be performed by another. This presents an aggregation possibility across categories, by combining logical sets of services within an umbrella, and reducing the number of visits to the home. Players like Sears are particularly well equipped to perform this aggregation function for home maintenance and home repair services.

### ***Contenders for the services last mile race***

The players in the services last mile race are far more diffuse and diverse than the players in the products last mile race. Every service provider that owns a specific relationship with the homeowner is a contender in this space. This includes home service agencies like Sears and Service Master, the realtor who helps you buy a home, the home security agency, and a variety of other players (see Figure 3). The winner in this race will be the player who manages the paradox of being local and customer-intimate, while still enjoying the benefits of scale and scope. In some ways, this is Sears’ race to lose, with 110 million names in their database. But we will see the emergence of several startups that will perform virtual aggregation for home services, by bringing together a variety of service providers. The startup imandi.com is just one of the many players who will vie for the home services pie.

# Last mile contenders - home services



In conclusion, the battle for the analog last mile is proceeding in parallel to the battle for the digital last mile. The parallels between the two battles are striking, but there are important differences. As the contours of the battle become clearer over time, there are interesting opportunities for large firms and for startups alike. Whoever wins or loses, consumers can look forward to the return of the milkman, who will bring products and services to our homes, and make our busy lives a little bit easier.