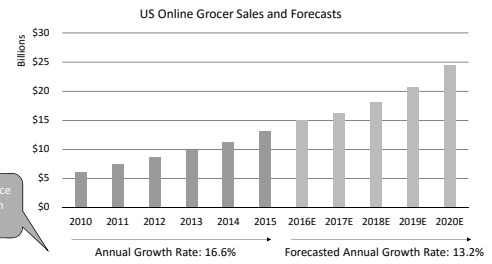


## Optimizing Customer Pick-up Locations Using an Empirical Model

Marshall Fisher, Chloe Kim and Xuanming Su

1

## Online Grocery Sales Are Growing Rapidly



US E-Commerce  
Sales Growth  
Rate: 11.2%

Source: IBIS World

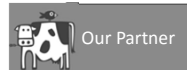
2

## Order Fulfillment Methods: Delivery vs. Pick-up

freshdirect.

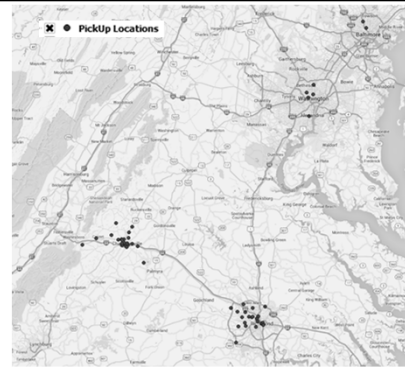
Peapod

amazon  
fresh



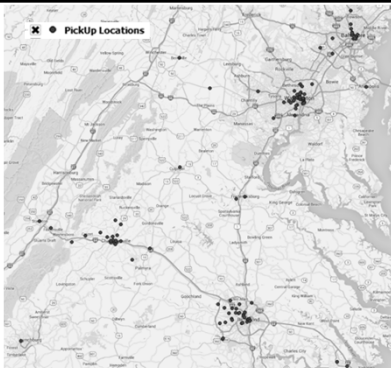
3

## Pick-Up Locations 2013 Q1



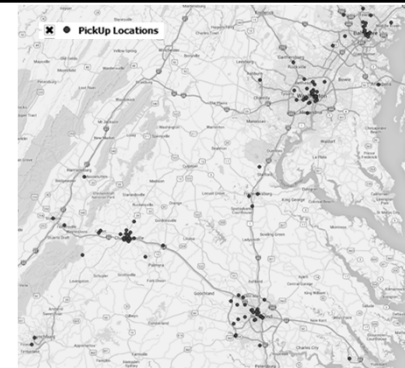
4

## Pick-Up Locations 2014 Q1



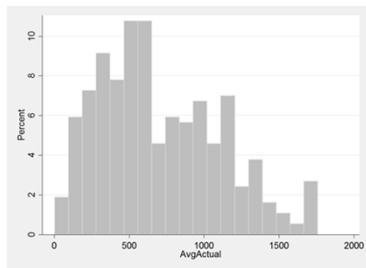
5

## Pick-Up Locations 2015 Q1



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### Average Sales Vary Significantly by Pick-Up Location



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### Research Question

How can the online grocer better optimize its pick-up location configuration?

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### Factors Considered for Determining New Locations Currently:

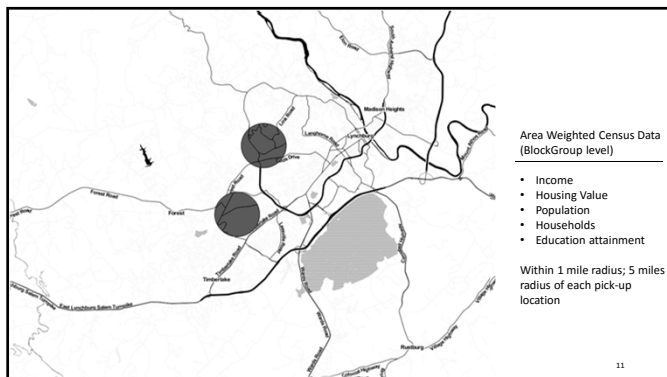
- Zip code level income data
- Competitor Locations
- Company's current locations
- Traffic at the potential sites
- Interviews with customers
- Partnership opportunities with residential complexes, gyms, etc.

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### Can We Do Better With Data Analytics?

Pick-Up Location Attributes	Surrounding Attributes
Day of Week, Week, Month, Year	Population
Location Type, Customer Limit	Labor Density
Location Frequency	Income, House Value
Home Delivery Availability	Age, Education Attainment
Near by Pick-up Locations Open This Week	Labor Density
Near by Pick-up Locations Open This Day	Residential Density
	# of Locations Nearby (School, University, Kindergarten, Starbucks, Supermarket, WholeFoods, Church)
	(Surrounding Attributes are measured within various radii)

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### Next Step: Increased Set of Feasible Locations



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Thank you!

We thank Fisherman-Davidson Center for their generous support for this project

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