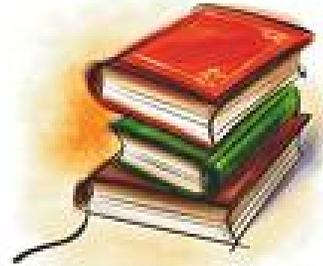


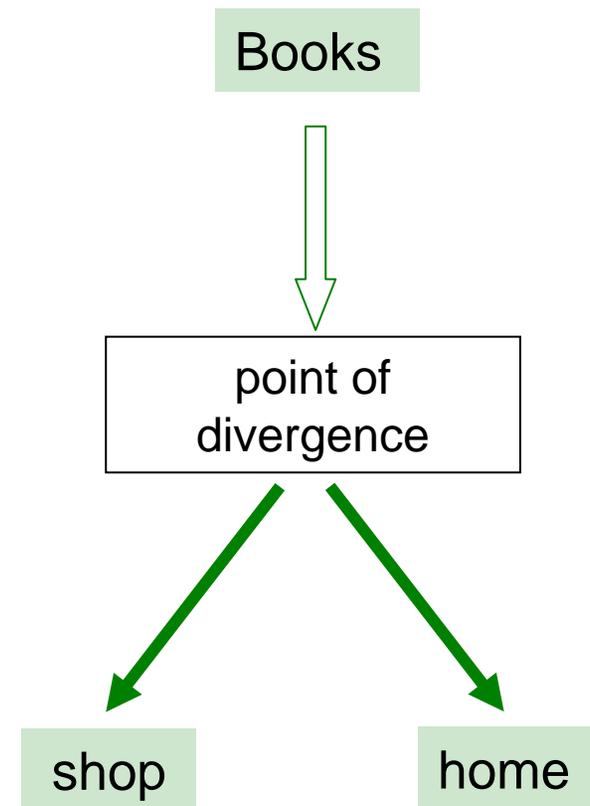
# Carbon auditing conventional and online book supply chains: *As easy as ABC?*

Julia Edwards, Sharon Cullinane & Alan McKinnon  
Logistics Research Centre,  
Heriot-Watt University, Edinburgh, UK

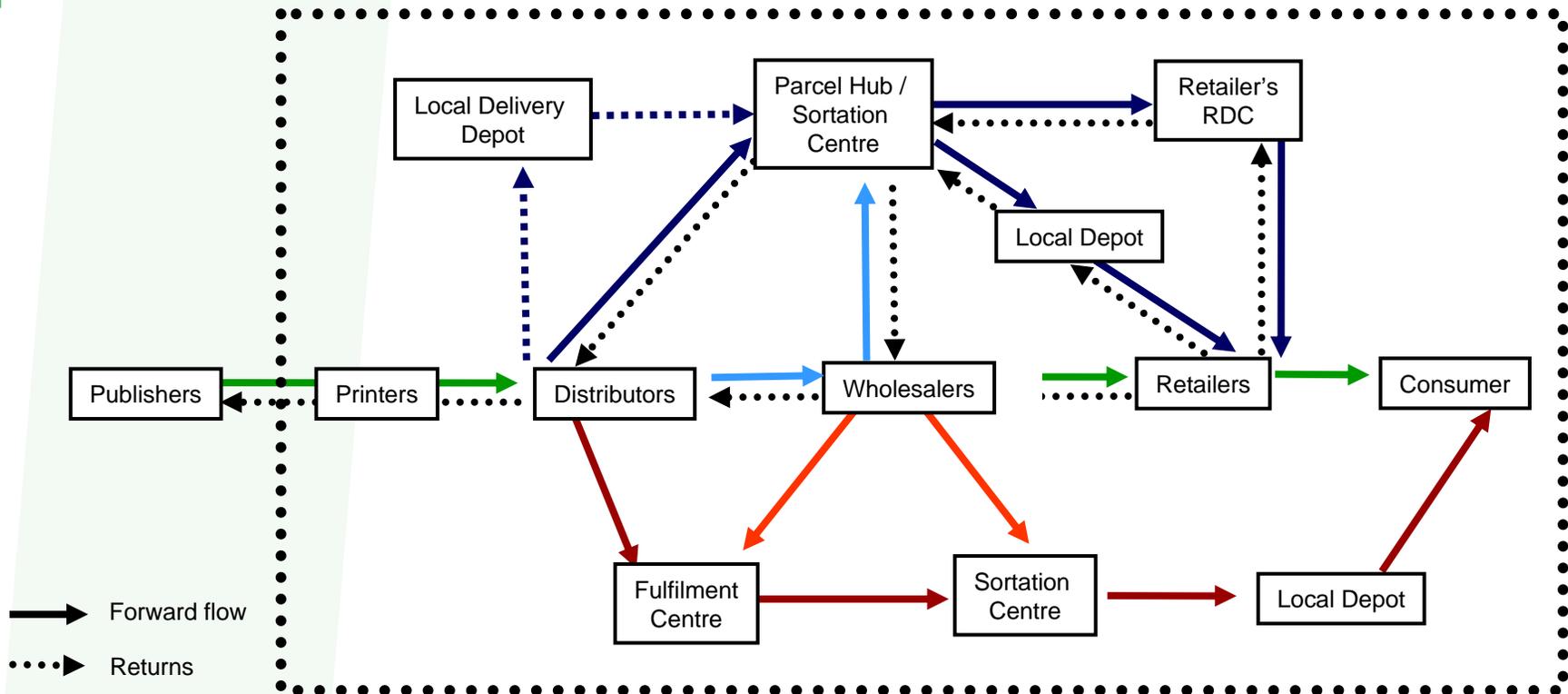
# Issues to be addressed



- Boundary issues
- Utilisation factors
- Carbon allocation
- Consumer behaviour
- Other environmental impacts

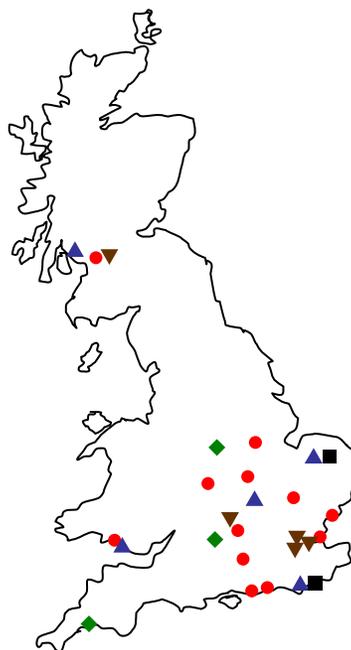


# The Book Supply Chain: Key players and their trading relationships



# Location of key players in the UK book industry

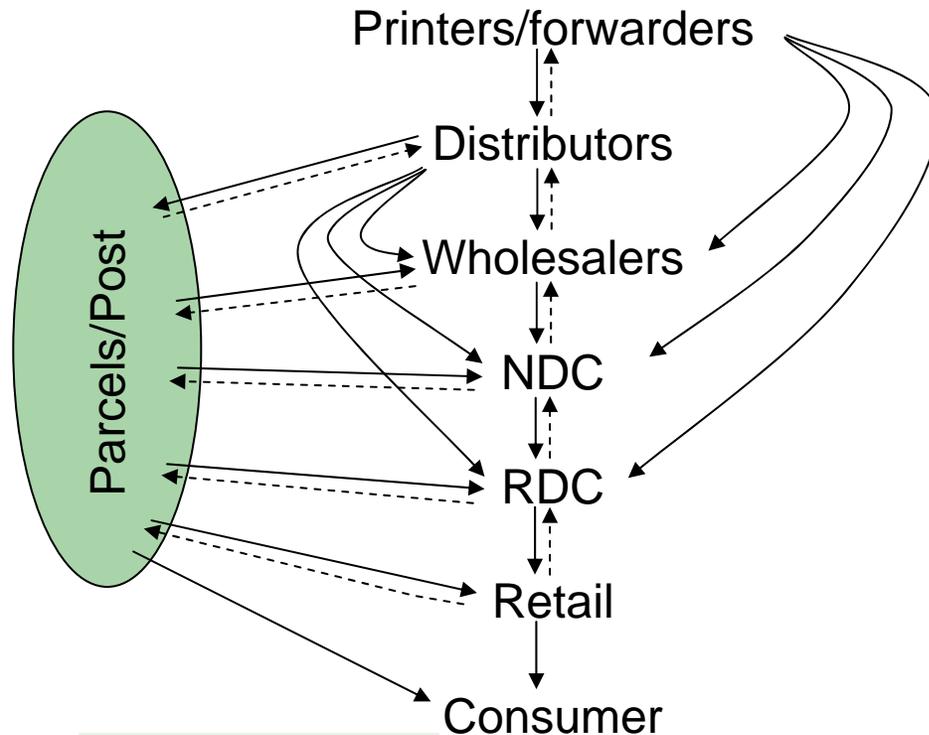
- Legacy
- Conglomeration
- Opportunity
- Government funding



- ▼ **Publishers HQs:** Glasgow; London; Oxford
- **Distributors DCs:** Abingdon; Basingstoke; Cambridge, Chelmsford, Chichester, Colchester; Glasgow; Grantham; Littlehampton; Northampton; Rugby; Swansea
- **Trade Wholesalers DCs:** Eastbourne; Norwich
- ◆ **Retailer-Owned RDCs:** Burton-upon-Trent; Swindon
- ▲ **Online Retailers DCs:** Eastbourne; Gourock; Milton Keynes; Norwich, Swansea
- Supermarket Retailers:** Asda; M&S; Morrisons; Sainsbury's; Tesco; Waitrose

# Book Industry Relationships: Conventional

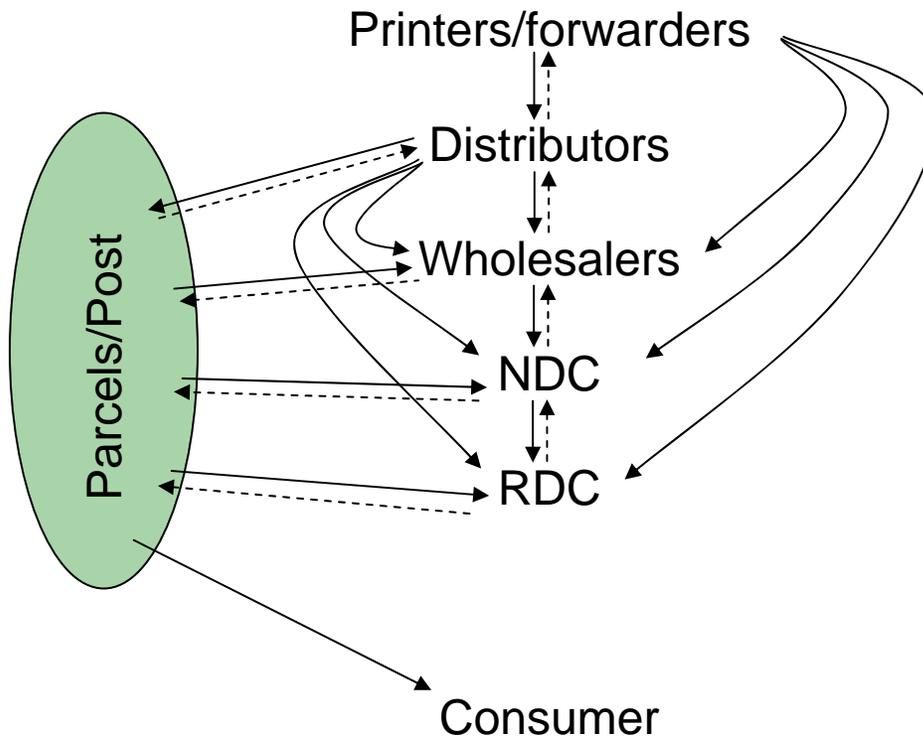
## Conventional retail



- 75% + books sourced from publishers via distributors;
- Largest book chains account for 50% of book market share;
- Stock holdings in book stores reduced in recent years;
- Book shelf-life = 30-days.

Source: discussions with leading UK Book Distributor

## Online retail



- British consumers willing to purchase books online;
- Internet accounts for 10% of book market share;
- Online retailers excel at the “long tail” of slow moving books;
- Parcel carrier versus post?

# Auditing: How many books? (warehousing)

At a:

- DC
- Wholesaler
- Independent Retailer
- Book Chain



Warehouse energy consumption = 1149 t-CO<sub>2</sub> annually

3,250,000 books at any one time

Average storage - 75 days

73g CO<sub>2</sub> per book



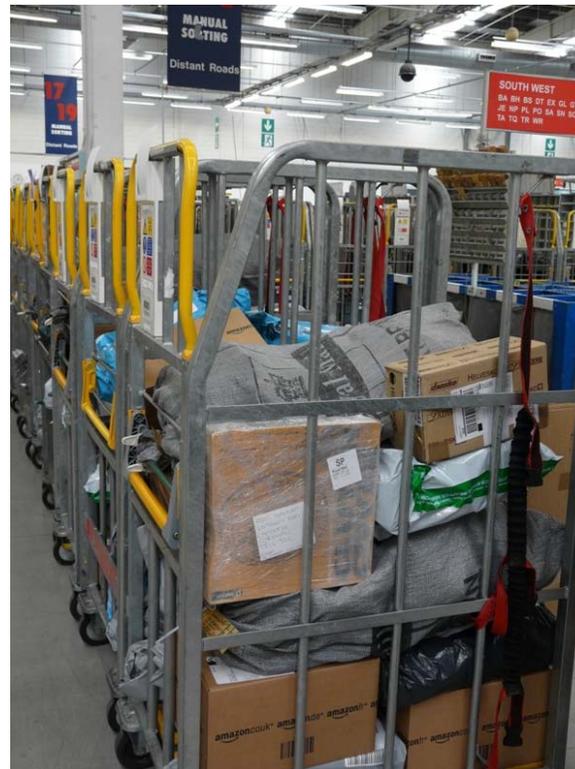
# Auditing: How many books? (trunking operations)



Carton (box) = 40 books  
Pallet = 30 cartons (boxes)  
Roll cage and truck = 5% books

In a:

- Carton (box)
- Roll cage
- Pallet
- Truck



# Auditing: How many books? (last mile operations)

In a:

- Package (parcel)
- Van

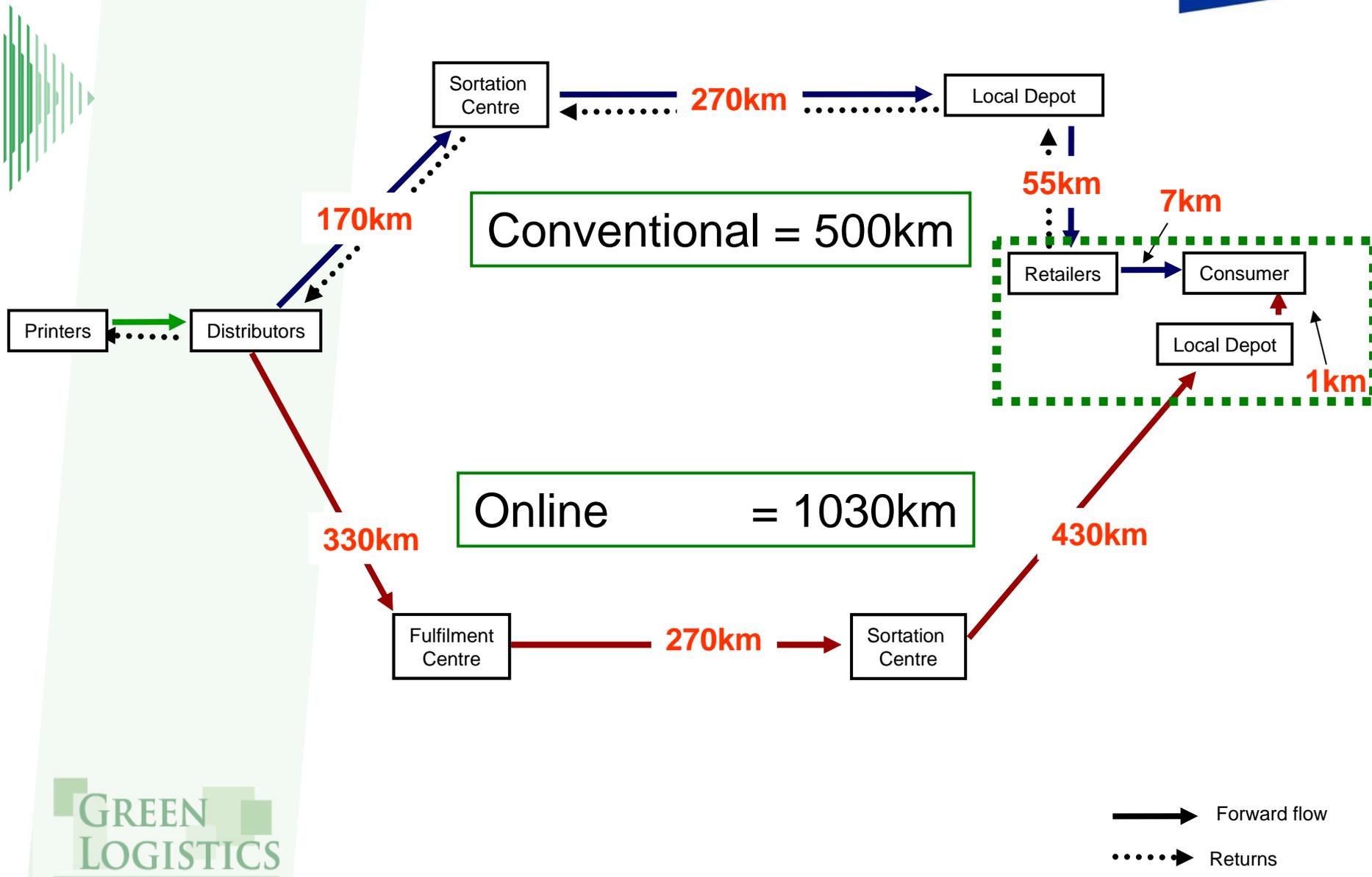
Package = 1.4 books

Van = 160 deliveries (5% books)

Round = 8 packages (11 books)



# Auditing: Freight transport



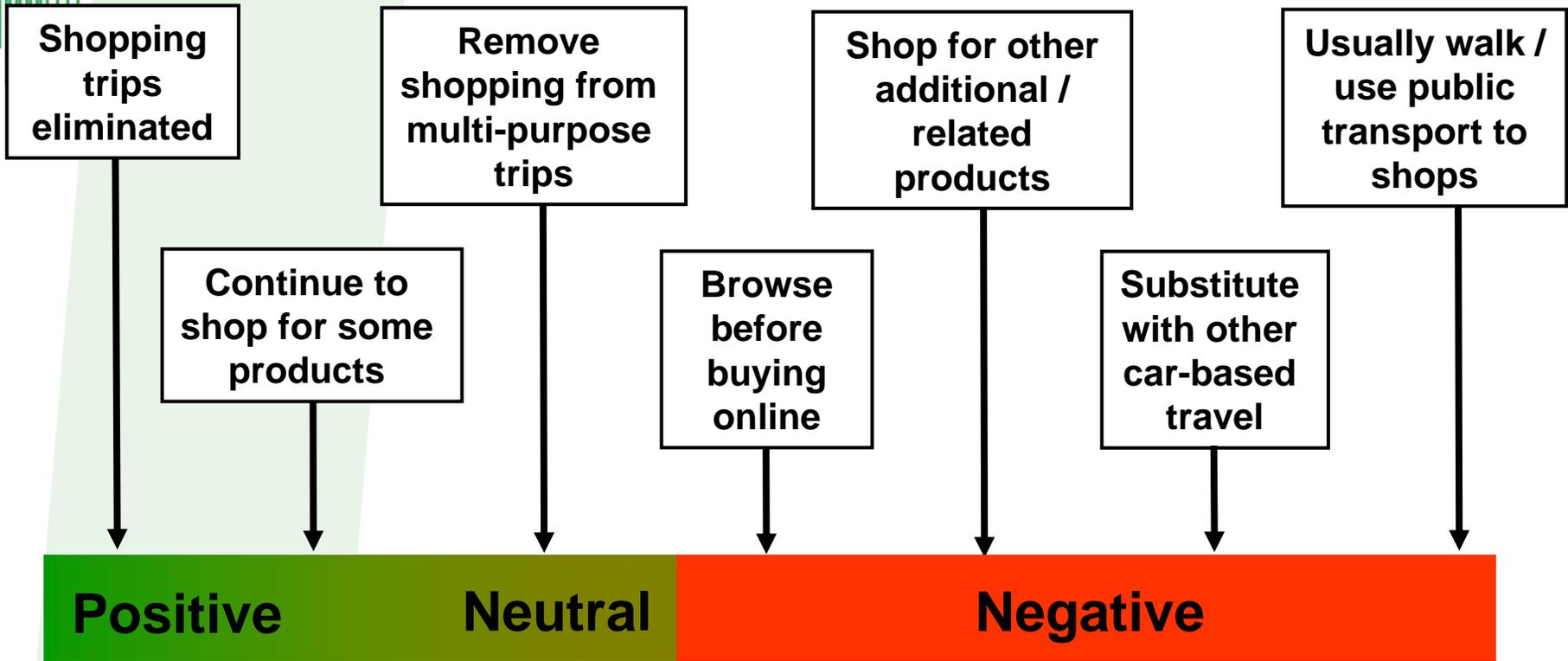
# Consumer book buying behaviour



*"I SAID do you have books on anger management?!!"*

- High street most likely location to purchase a book;
- Few shoppers make dedicated book buying trips (preferring to buy on impulse or as a break from shopping);
- 33% of adults have purchased books on the web in previous 12-months

# Personal travel choices & the impact of Home Delivery

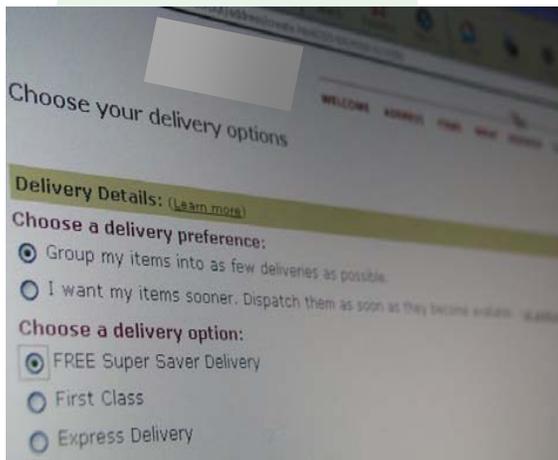


**Effects on car traffic**

# Environmental implications of the Book Industry

## 1. Packaging issues

- Consumer decisions at time of purchase
- Company policies / shipping arrangements



# 1. Packaging

- Leading UK wholesaler indicated that packaging accounted for 8-12% of a typical parcel's weight
- Issue for both retail channels



Distributors' packaging  
150g (6 books)

Online retailer's packaging  
80g (2 books)

## 2. Potential for excess new stock

'Sale or return' basis to retail supply

### Book Industry Returns Initiative (2000)

Retailer able to return book between 3-months & 15-months after initial publication for credit

Meet the author of  
'The Secrets of Popularity'



© Mark Parisi

# 3. Reverse logistics – book returns



restock for resale to retailers;  
refurbish and resale to retailers;  
resale to remainder merchants;  
donation to charities; &  
pulping.

Little economic  
incentive to  
restock book  
returns

Chartered Institute of Transport (2004)



- Book industry is extremely complex, with many trading relationships;
- To date, legacy and financial incentives have strongly influenced the geographical location of key players;
- Mergers and acquisitions have always been a key feature, but currently, the book industry is in a state of flux;
- Several industry-wide practices have an inherently negative impact on the environment;
- Fundamental to any audit is the treatment of the “last mile” comparison.

THE END...?

