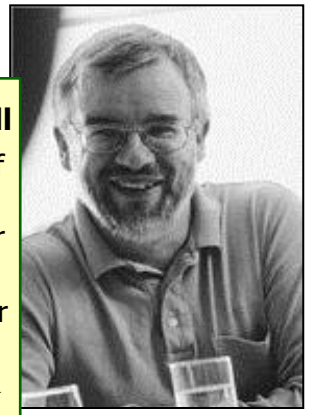
Ocado's operational model

A profitable approach?

Sequoia

Presentation structure

- Introducing Sequoia
- Context: the impact of online shopping on the UK grocery industry
- Modelling Ocado's supply chain
  - Current & future supply chain costs
    - CFC scale economies
    - Trunking & Delivery
    - Sensitivity analysis
  - Future operating margin
    - Sensitivity to CFC capacity constraints



Steve Wall

Founder of Sequoia in 1992, after a career at Unilever and Coopers & Lybrand

Sequoia was founded in 1992 and is focused on the Supply Chains of consumer goods industries.

What we do

Kimberly-Clark

Reckitt Benckiser

Trained over 1000 Demand and Supply planners in the fundamentals of forecasting & stock management.

Unilever

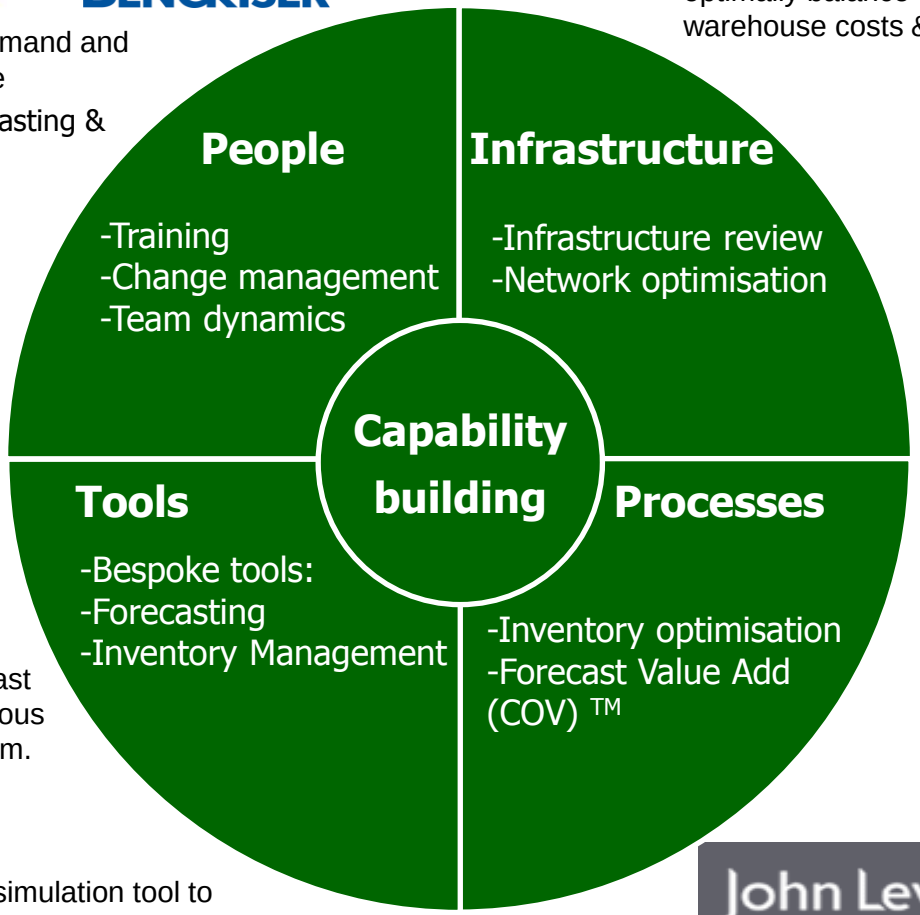
DANONE

Electrolux

Reviewed European Network Design to optimally balance distribution costs, warehouse costs & inventory holding.

Dreams

Stress tested existing distribution network against future growth plans.



Unilever

Post-integration manufacturing strategy following Bestfoods acquisition

SANDOZ

Developed bespoke forecast appraisal tool for autonomous global roll-out by client team.

Argos

Stress test and capacity plan for 5 year strategy. Pragmatic support to get automated facilities up to speed. Reverse supply chain diagnostic.

oriflame
natural swedish cosmetics

Built a forecast simulation tool to identify best achievable forecast performance & set KPI targets for forecasters.

John Lewis

Stock Modelling and Training in setting up an optimal replenishment process.

Sequoia

Context: the impact of online shopping on the UK grocery industry

Sequoia believe changing consumer preferences will put significant strain on the one-size-fits-all model of 'big-box' grocery retailing.

The anticipated growth of online shopping poses a particular challenge to the UK grocery supply chain:

- The current grocery model of large out-of-town supermarkets is built on the key principle that consumers are prepared to do their own order picking & home delivery.
- Online shopping means supermarkets can no longer rely on this 'free labour'.
- The anticipated growth in online shopping will only exacerbate this issue: online shopping is set to increase from 3.2% of UK grocery spend (2010) to 5.4% in 2015[1].
- Minimising order picking costs is the key to profitably delivering online shopping – hence we have analysed Ocado's approach to automated order picking.

Note: this analysis uses publicly available information & has been funded by Sequoia: Ocado are not one of our clients.

1. Source: IGD Research

Context: the impact of online shopping on the UK grocery industry

"In ten years' time we will be living in the future not the past."

Tim Steiner, CEO of Ocado - July 2010

Modelling Ocado's supply chain

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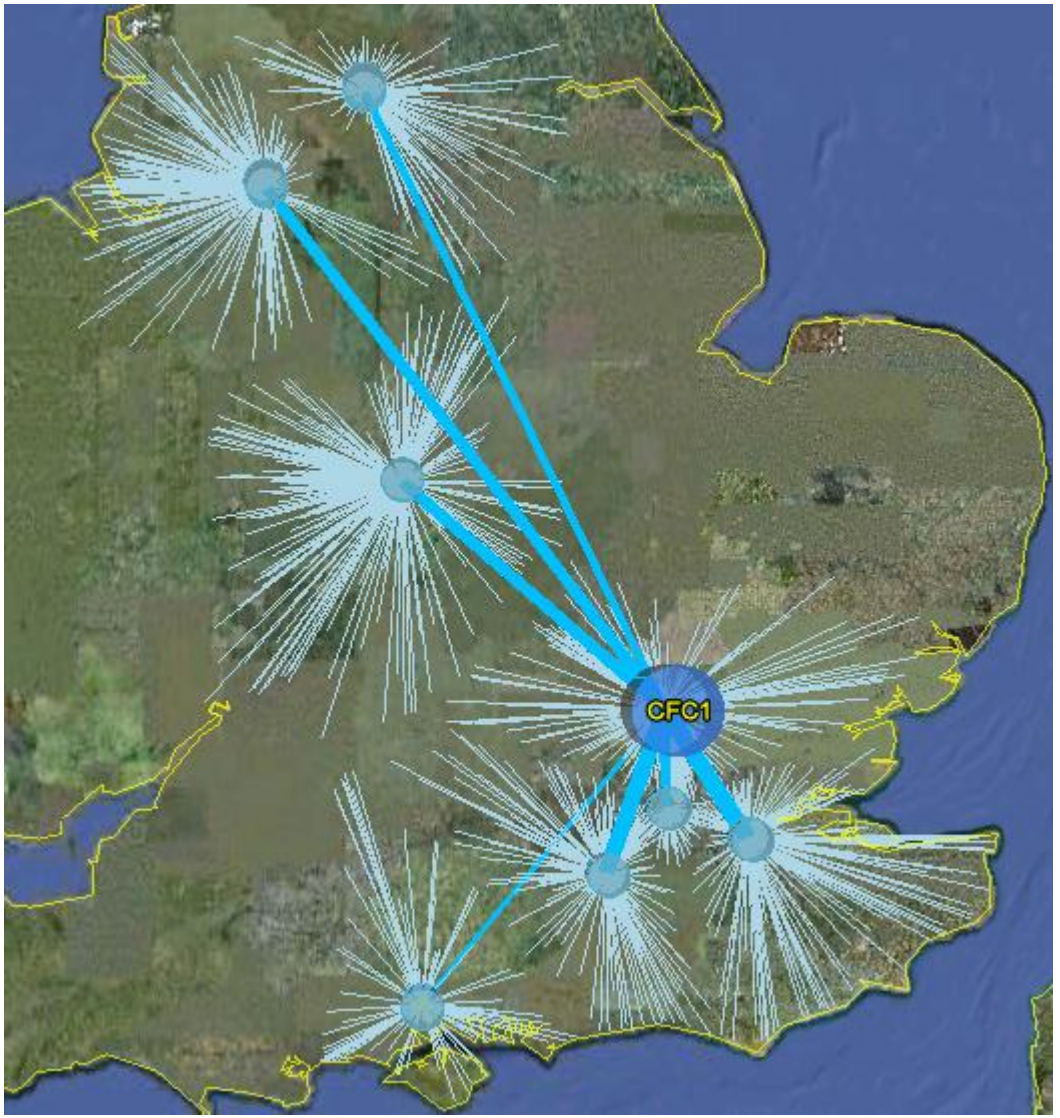
Current infrastructure

- Customer base: model assumptions
  - Orders per week: 92,916
  - Number of customers: 240,000
  - London bias: 50% of sales are from within M25
  - Geographic coverage: 17.4m households
    - 66% of UK households
    - Modelled at 4-digit postcode level

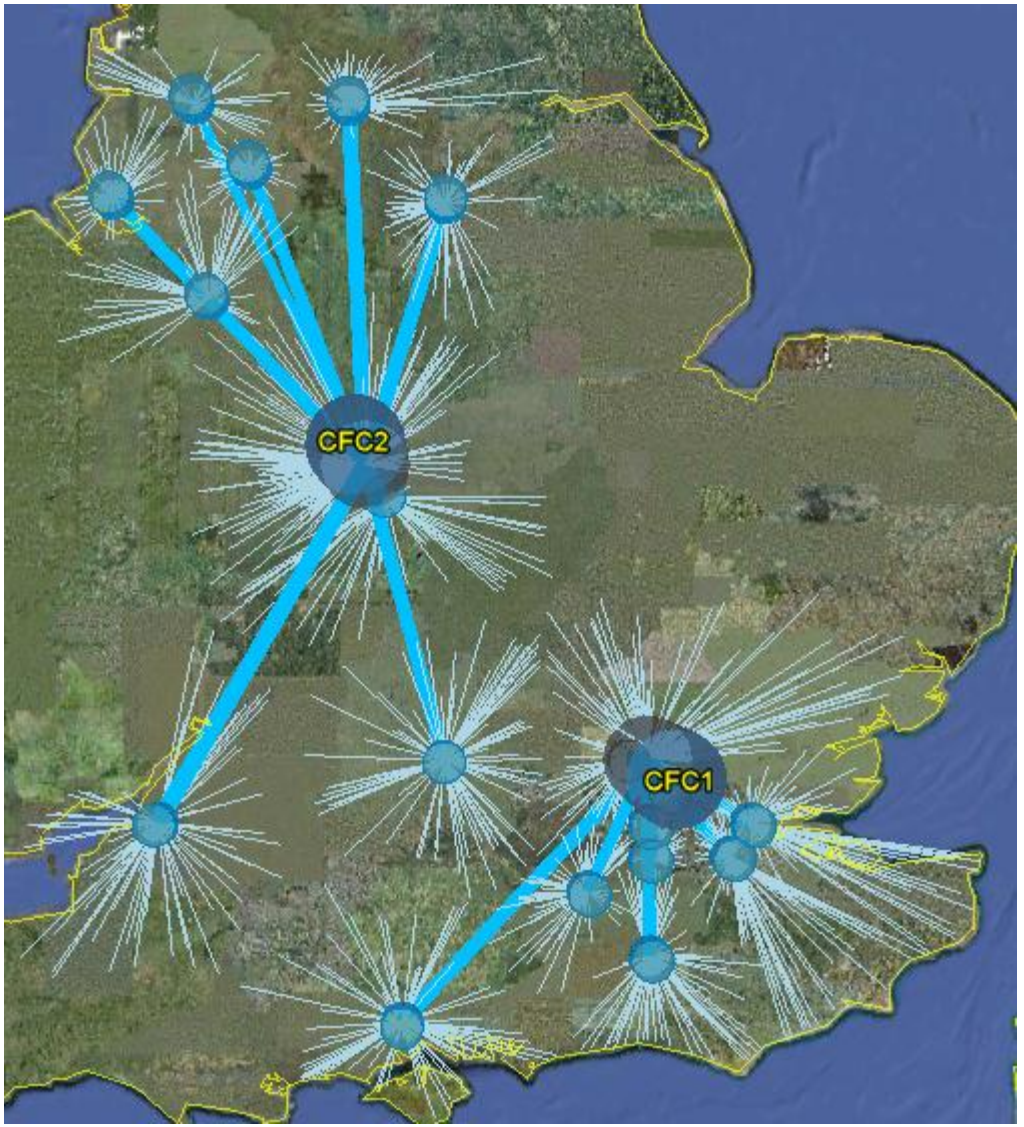
- Current supply chain infrastructure (FYE 2010)
  - Hatfield CFC operating at 92,916 orders per week
  - Spoke network



Future infrastructure

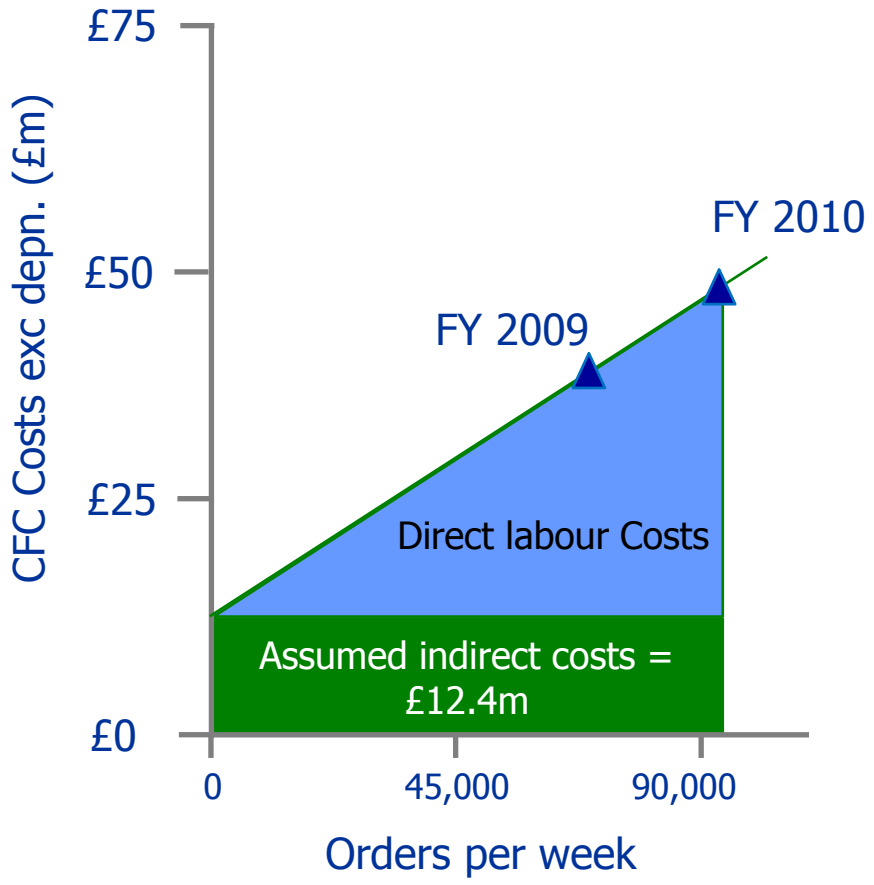
- Customer Base: model assumptions
  - Orders per week: 360,000
  - Number of customers: 930,000
  - London bias: 20% of sales are from within M25

- Future supply chain infrastructure
  - Hatfield & Tamworth CFCs operating at 180,000 orders per week
  - Expanded spoke network
    - 11 additional spokes (compared to FYE 2010)



CFC economics

We have inferred the split of Indirect and Direct costs using Ocado's financial accounts:



Fixed CFC costs (FY 2010)

Assumed indirect costs: £12.4m

CFC depn. cost: £15.3m

Variable CFC costs (FY 2010)

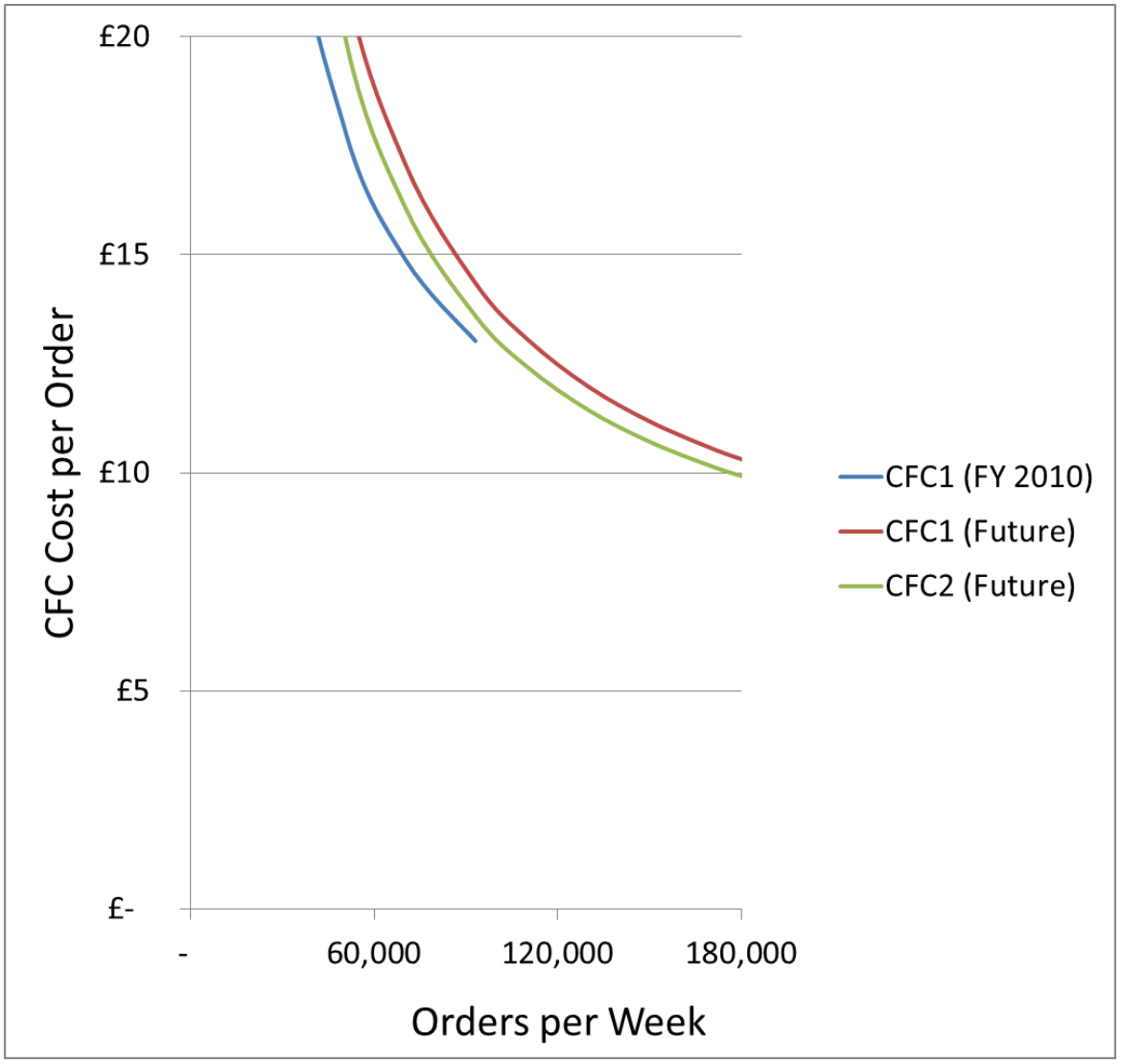
Items per man-hour: 121

Assumed employment cost per man-hour: £14

Assumed direct labour cost: £35.1m

Total CFC Cost (FY 2010): £62.9m

CFC scale economies



CFC Costs per order (inc depn.):

CFC1 (FY2010): £13

CFC1 (Future): £10

CFC2 (Future): £10

Assumptions

Future capacity & efficiency (both CFCs):

180,000 orders per week

Efficiency of 147 items per man-hour

Future CFC1:

£80m investment

£2m increase in indirects cost for volume increase

Future CFC2:

£210m investment

£2m increase in indirects cost for volume increase

£2m decrease in indirects for 'non-transferable' costs

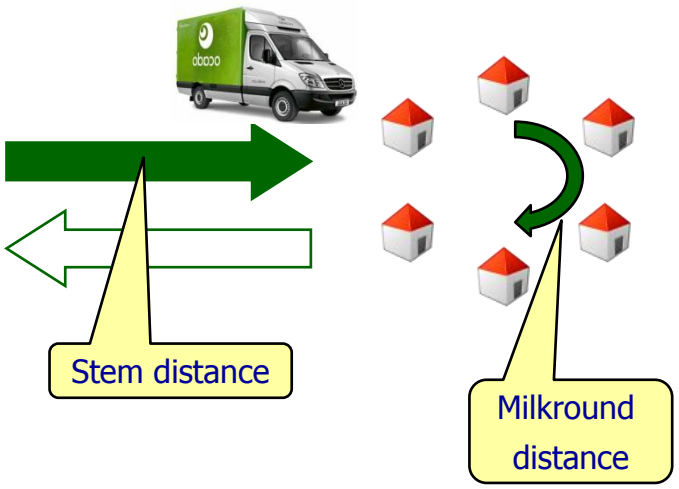
Trunking & Delivery

CFC

Trunking & Spokes

- Trunking costs
  - Total kms calculated by model
  - Cost per km based on industry benchmarks
- Spoke costs
  - Average depn. cost per spoke: £0.6m
  - Directs & indirects costs based on industry benchmarks

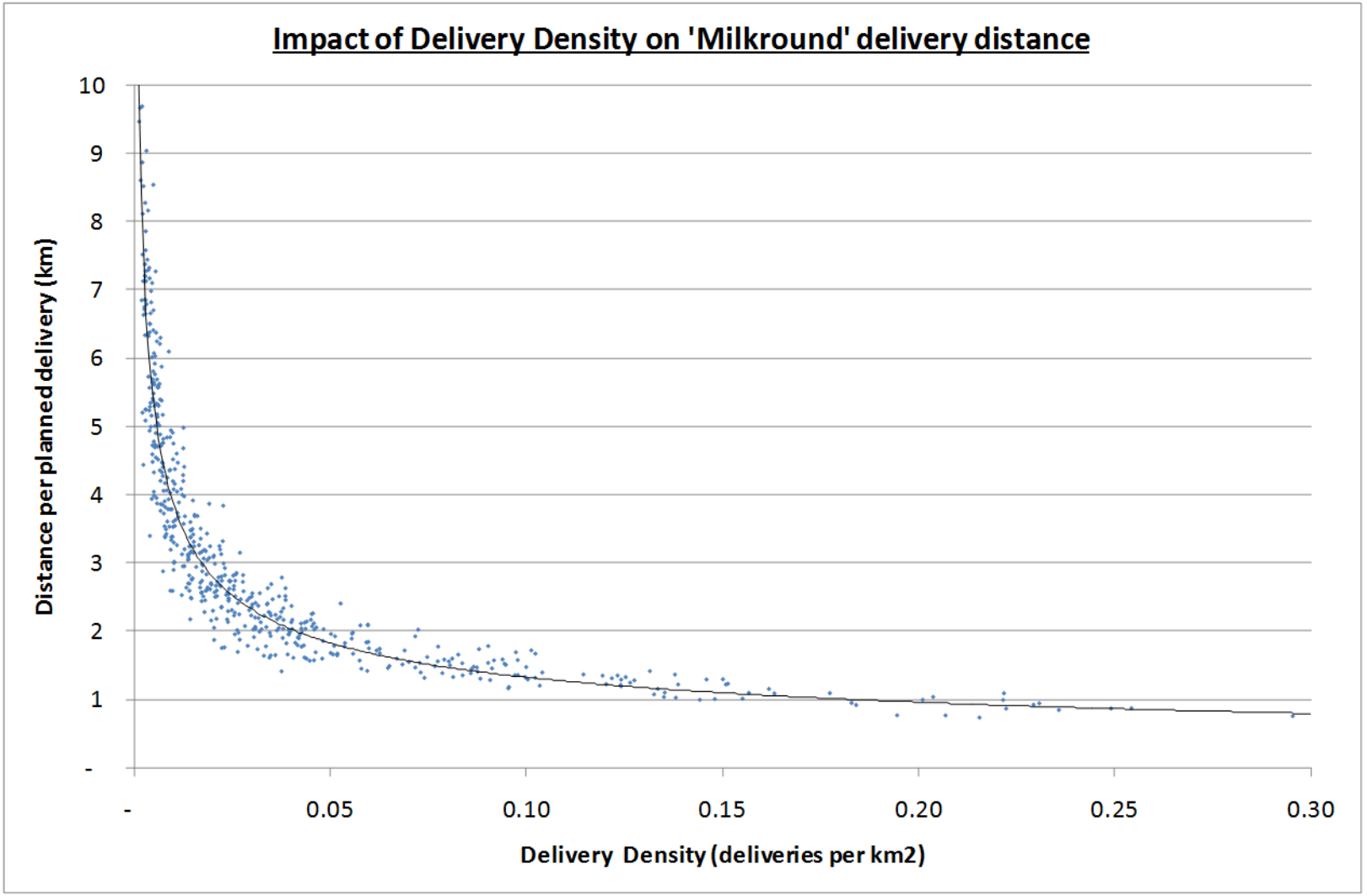
Home Delivery



- Home delivery costs modelled for each spoke/CFC
  - Postcode allocation to spokes/CFCs
  - Delivery density derived from households per postcode data

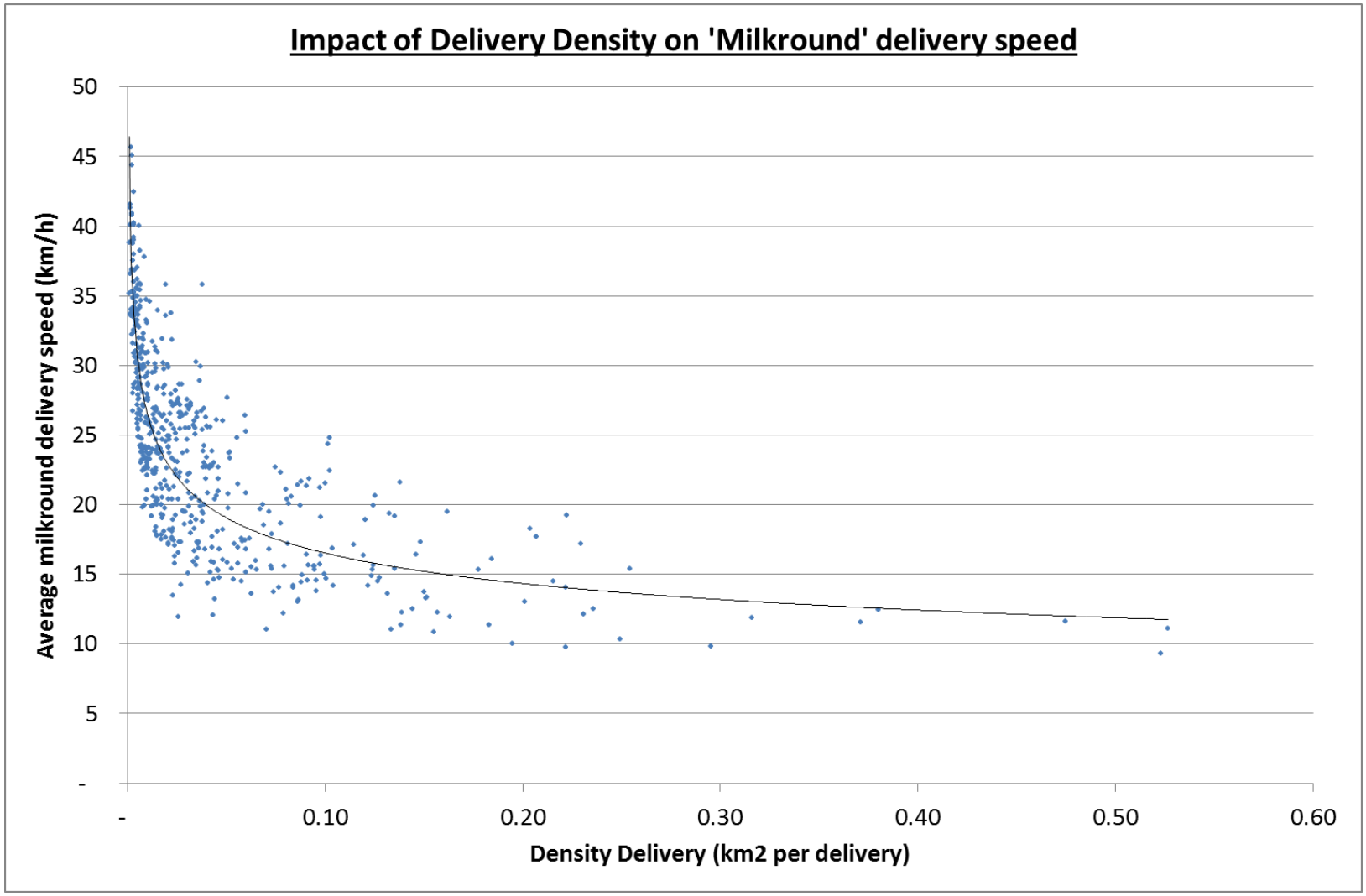
Home Delivery costs – distance vs delivery density

We use real-world data to model the impact of drop density on Milkround distances…

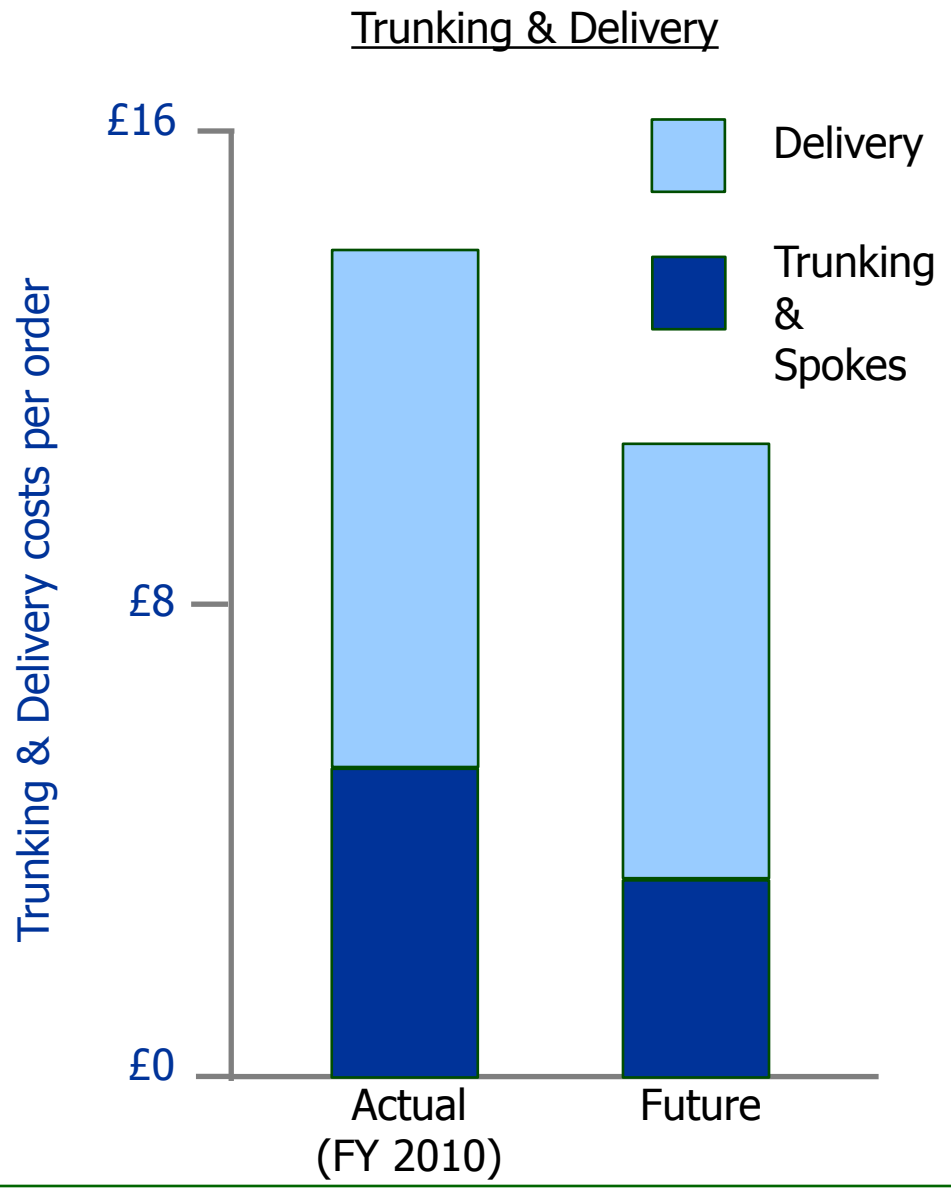


Home Delivery costs – vehicle speed vs delivery density

…and supplement this with a similar relationship for driving speeds.



Trunking & Delivery: current & future operating costs



Trunking & Delivery costs per order:

Actual (FY 2010): £14

Future: £11

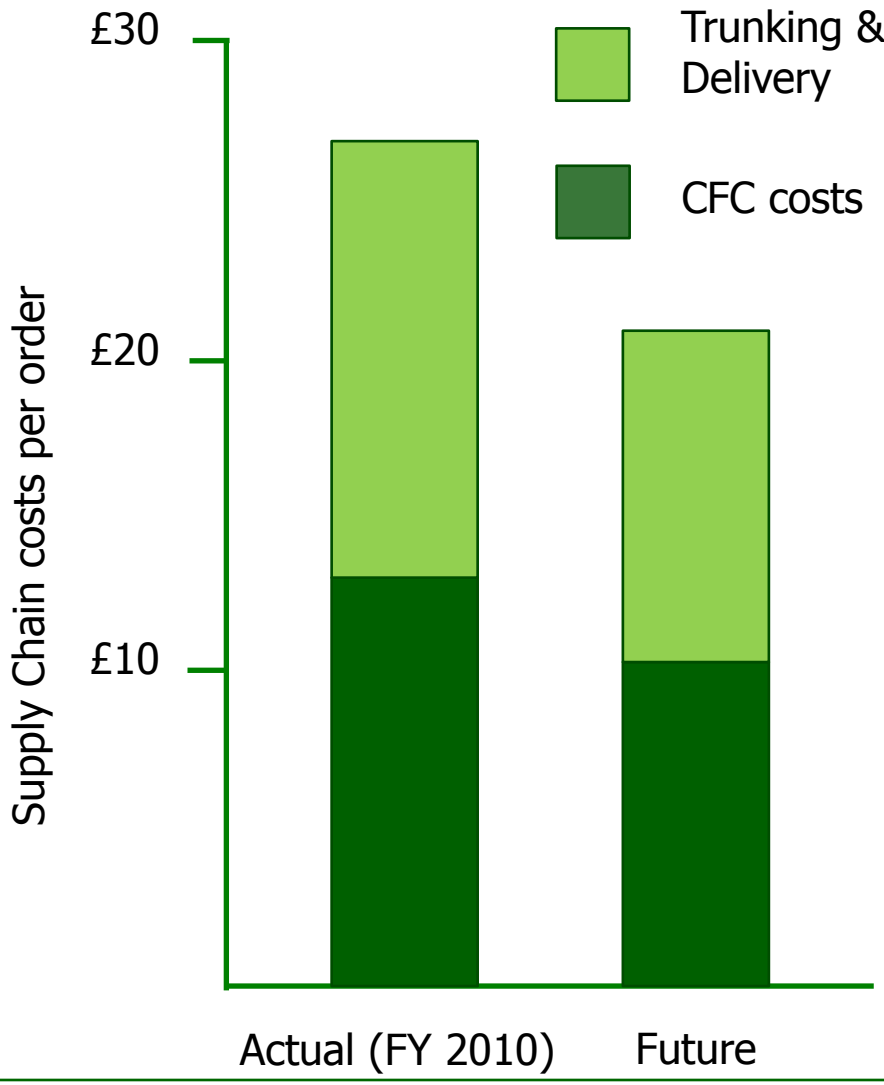
Notes:

- Future volume: 360,000 orders per week
- 11 new spokes (averaging 15,000 orders per week)
- Deliveries per van per week: 159

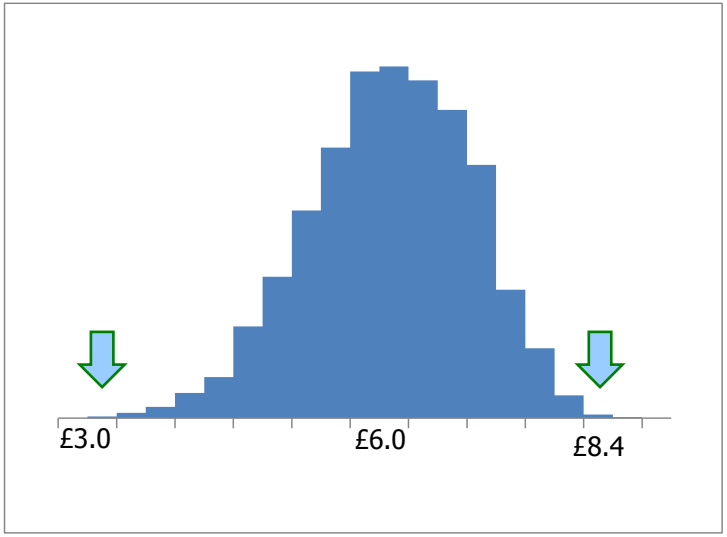
  159 is halfway from 142 (H12011) to 175 (Ocado's long term target).
- No reduction assumed for inbound delivered cost of goods in future scenario

Current & future operating costs

The CFC and Trunking & Delivery cost savings combine to save an estimated £6 per order.



Sensitivity analysis of cost saving



Critical operating parameters:

- Achieving planned volume increase
- CFC picking efficiency
- Delivery Routing optimisation

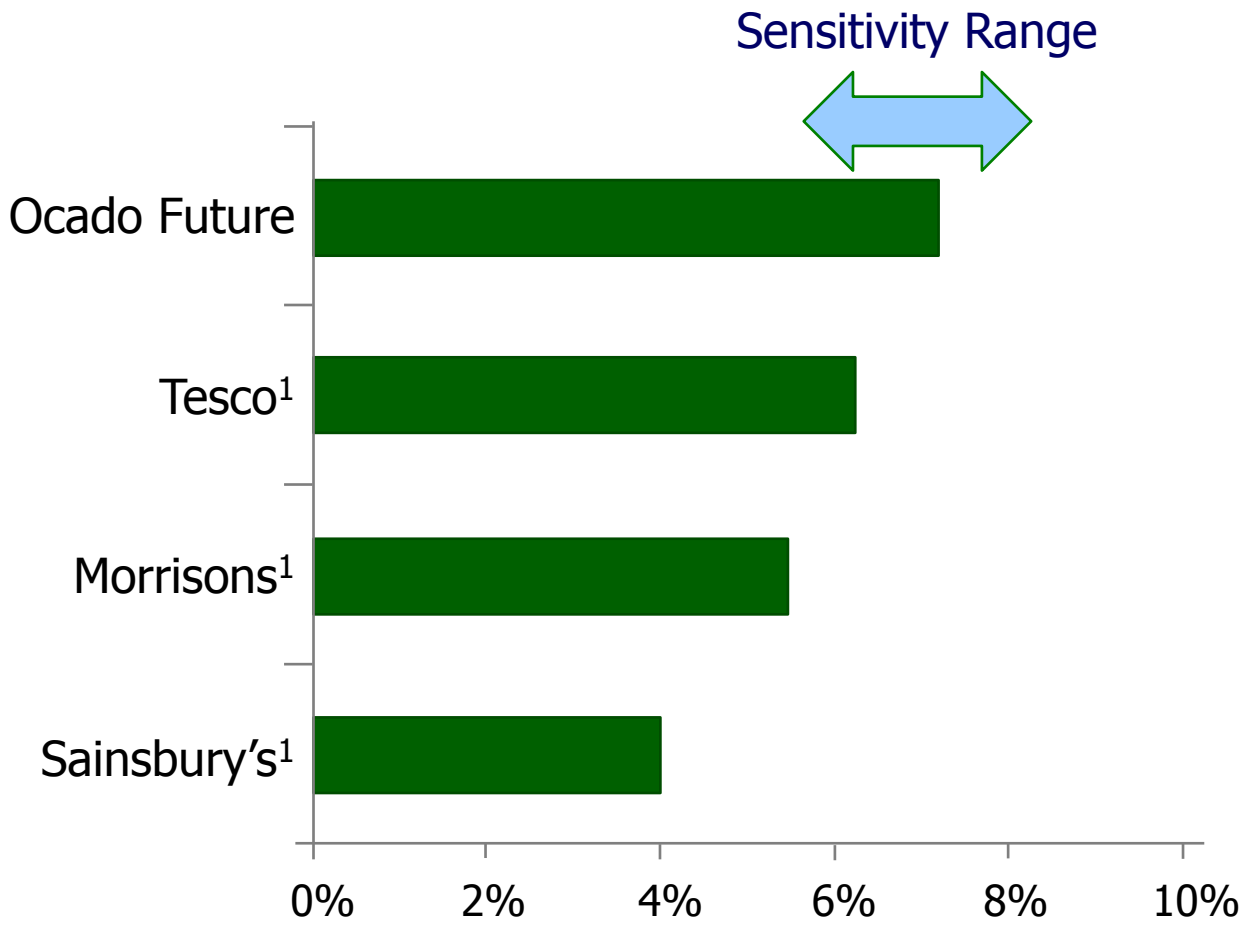
Modelling Ocado's supply chain

Future operating margin

Sequoia

Future operating margin

Our modelled costs indicate that Ocado's online operation will have a higher operating margin than the existing 'Big-box' model of grocery retailing:



Operating margin assumptions

- Current (FY2010) gross margins
- Future admin costs per order fall from £6 to £4

1. Current operating margin (as at Sept 2011).

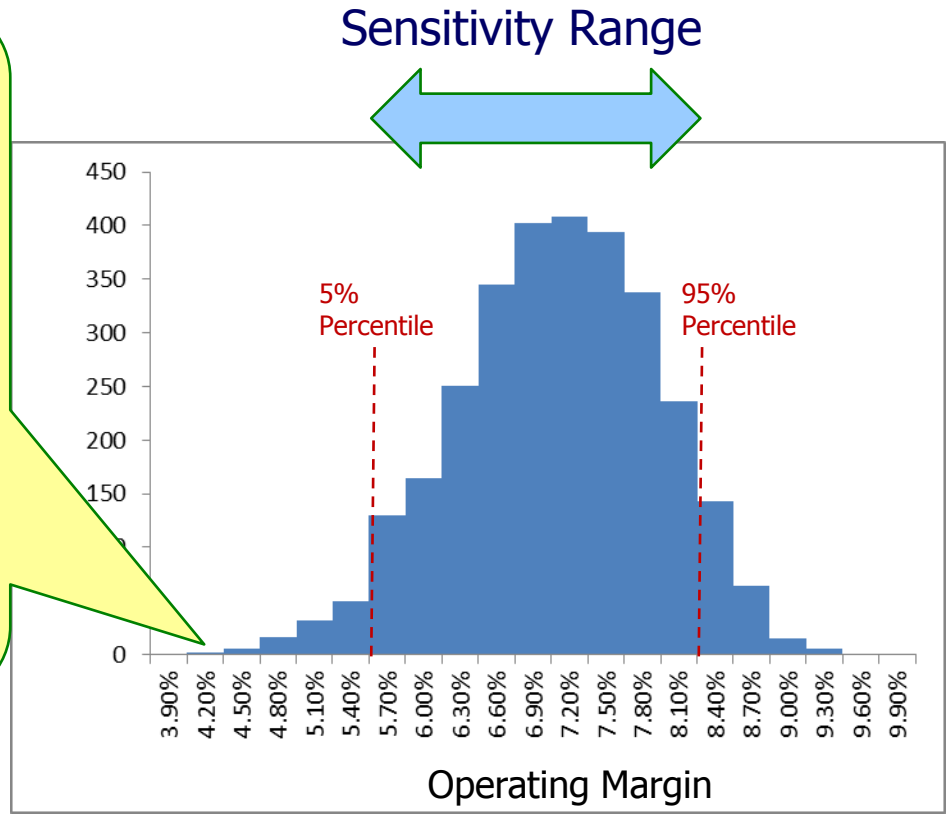
Source: Google Finance

Future operating margin: sensitivity analysis

The range of CFC capacity scenarios we have modelled suggests the future operational model can absorb capacity issues at the CFCs…

Key CFC assumptions:

- Invest £210m in CFC2 and £80m in CFC1
- Achieve 75% of anticipated volume (135,000 orders per week at each CFC)
- Picking efficiency at pre-investment levels (FY2010: 121 items per man-hour)



…leading us to conclude that in investment terms, Ocado is a slow-motion Amazon.

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