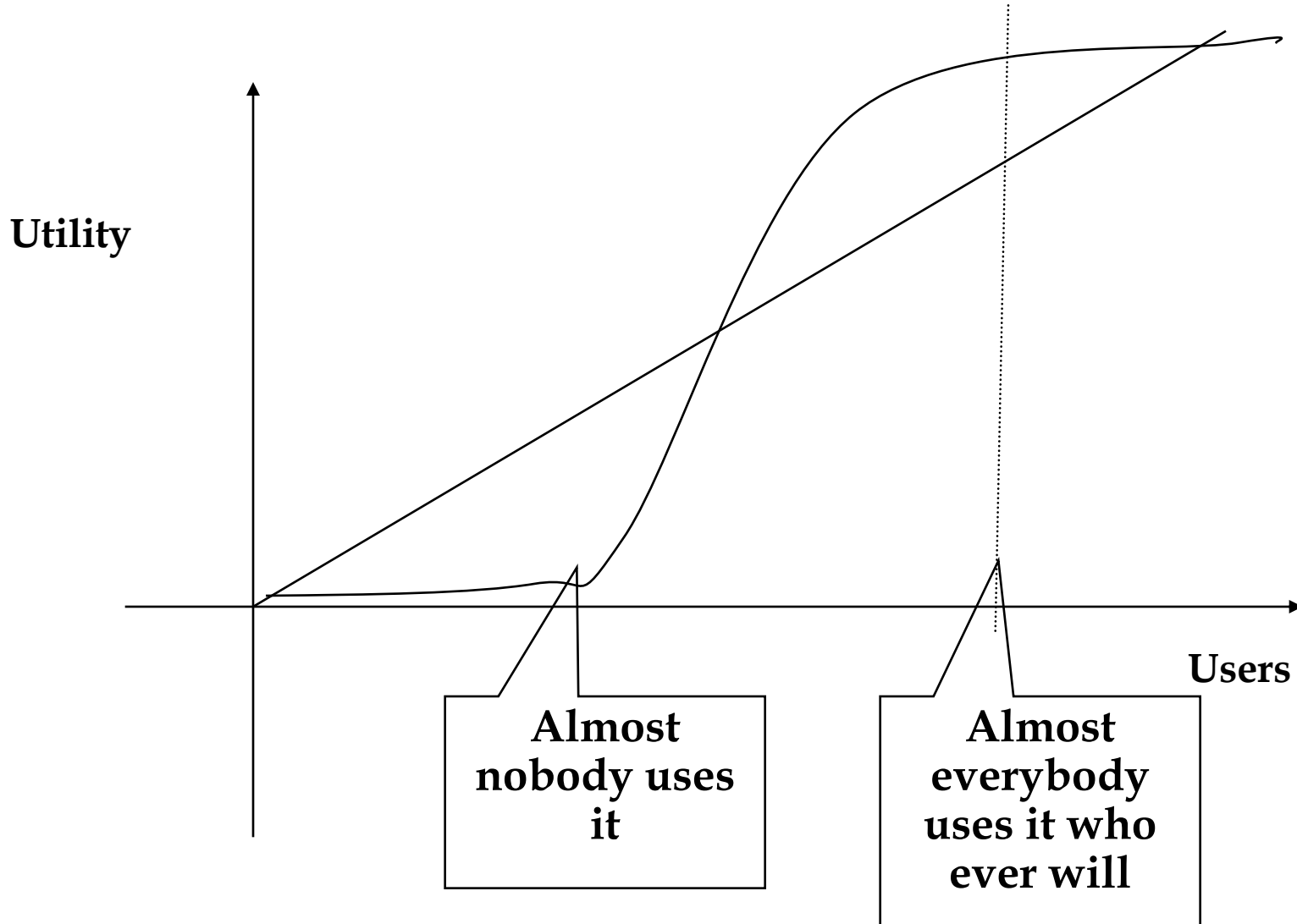


# Network Externalities

- The more people, the valuable the network
  - Examples: Telephone late 19<sup>th</sup> Century
  - Fax 1985-8
  - Email 1995-9
  - Credit cards 1980s
- “Metcalfe’s Law”: The value of a network is proportional to the square of the number of users
- Not completely accurate, as the value to each user is non-linear

# Network Effects



# Virtual Networks

- Example: iPhones and Apps
  - Virtuous circle:
  - People buy iPhones because lots of software available
  - Developers write software because lots of customers
- Many other examples
  - Credit cards and merchants
  - VCR/DVD standards and media content
- Winner takes all
  - Dominant firm model
    - Development of effective monopoly/oligopoly
    - Not always: e.g lots of FAX machine makers

# Networks

- The increase in value of a network is an example of what economists call an “Externality” – an external factor other than price
- Network means that my purchase benefits all other users as well as myself.
- Once a network passes a critical size it grows rapidly
  - Success disaster
- Network allows opportunity to extract value even when marginal costs are near zero
  - Price controls
  - Lock-in: Value is switching cost
- \*\*\* “Combination of high fixed/low marginal costs, high switching costs and network externalities lead to a dominant firm model” \*\*\*
  - One sentence summary of information economics

# Network Effects

- Dominant firm markets -> Huge amount to play for
- Control of key de-facto standards
- Huge first-mover advantages
  - Can be displaced by larger entity
    - MS: “Embrace and Extend”
      - Spreadsheets, word processors
- Need to create bandwagon effect with makers of complimentary products
  - Need to court developers rather than users (e.g. MS)
- Price to value
  - But still need to make a profit

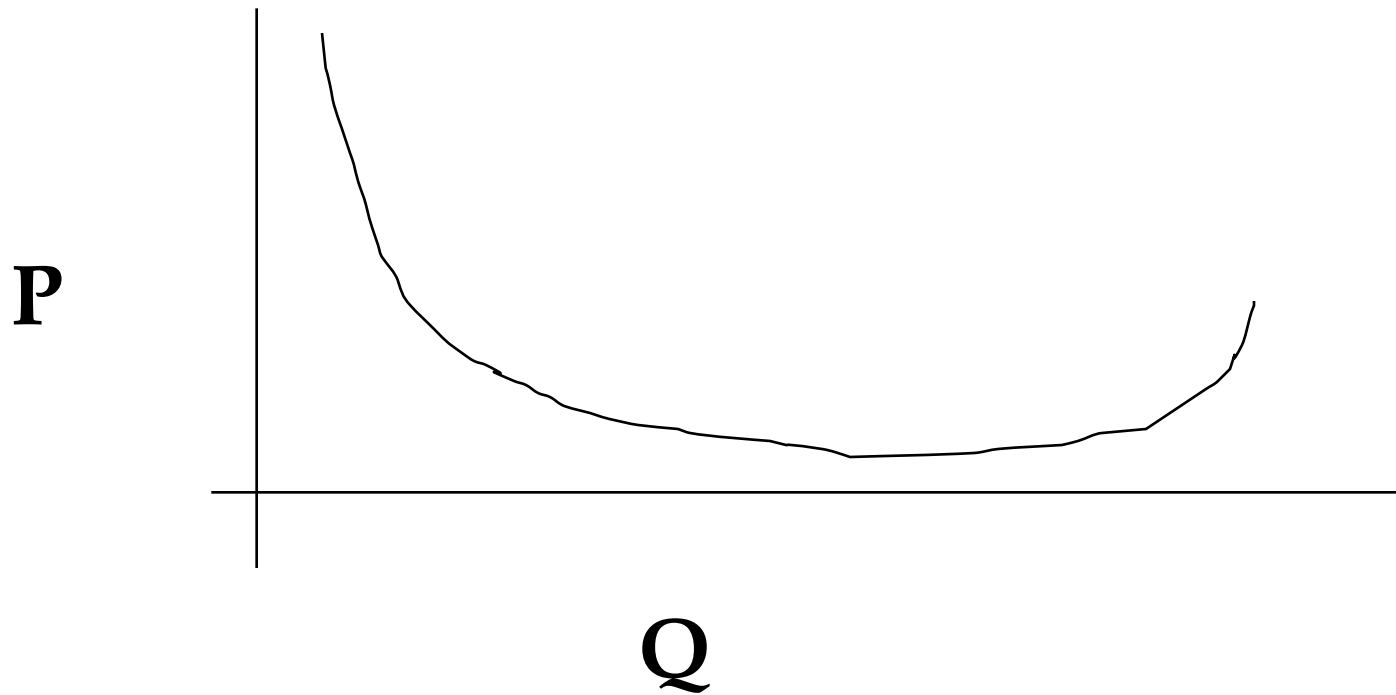
# Consequences of network externalities

- Dominant firms
  - Google, Ebay Amazon
- Huge first mover advantage
  - De facto standards
  - Crazy valuations

# Liquidity

- Liquidity is the ease with which an asset can be traded without creating a substantial change in price or value.
- Liquidity is a Network Externality
  - a single marketplace tends to dominate for any single class of goods
  - Reputation
- E.xamples:
  - Ebay vs Yahoo Auctions
  - Stock exchanges

# Manufacturing cost

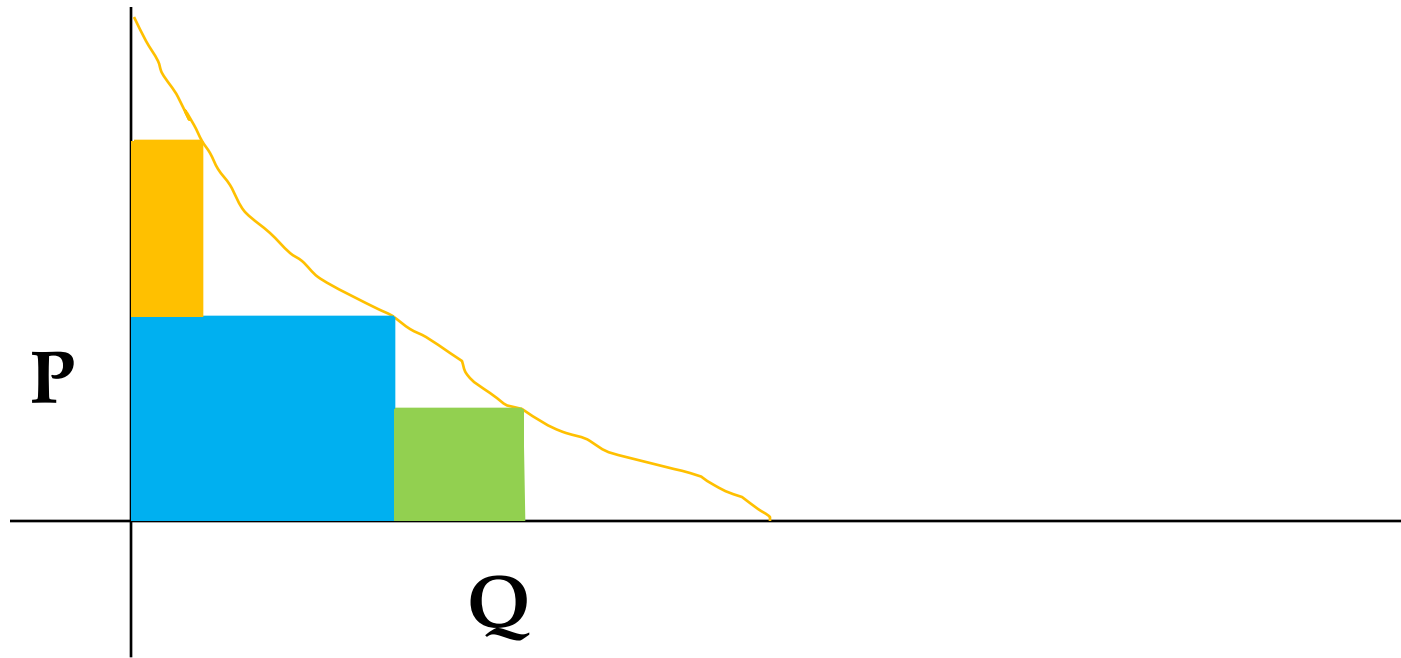




# Supply and demand curves



# Discriminating monopoly



# Distance Selling Regulations 1

- Consumer Protection (Distance Selling) Regulations 2000
- Electronic Commerce (EC Directive) Regulations 2002
- Privacy and Electronic Communications Regulations (EC Directive) 2003 update 2012/3
- Consumer Rights Directive 2011
- IANAL!

# DSR 2

- i) Your identity including sufficient detail for the consumer to be able to identify the business they are dealing with. *Means real name*
- ii) (ii) A description of the main characteristics of the goods or services you are offering.
- iii) (iii) The price of the goods or services you are offering, including all taxes.
- iv) (iv) Details of any delivery costs.
- v) (v) Details of how payments can be made

# DSR 3

- vi. If payment is required in advance, you must supply your **full geographic address**.
- vii. The arrangements for delivery or performance of the service, for example when consumers can expect delivery of the goods or the service to start. The contract should be performed within 30 days unless the parties agree to a different period. **Note this affects pre-orders**
- viii. Information about your consumers' right to cancel, where applicable

# DSR 4

- ix. If consumers have to use a premium-rate phone number, you must specify the cost of the call (including taxes) before any charges are incurred for the phone call.
- x. For how long the price or the offer remains valid.
- xi. The minimum duration of the contract where goods or services are to be provided permanently or recurrently and
- xii. That you will pay the cost of your consumers returning any products that you supply as substitutes because the goods or services originally ordered are not available.

# DSR 5

- After buying information that must be supplied *in a durable form (meaning paper or email)*
- The information above
- when and how to exercise their rights under the DSRs to cancel including
  - for goods – whether you require goods to be returned by the consumer and if so who will pay for their return
  - for services – the consequence of agreeing to a service starting before the end of the usual seven working day cancellation period
- details of any guarantees or after-sales services (*but see warranties*)

# DSR 6

- the geographic address of the business to which the consumer may direct any complaints. This means a physical location and therefore excludes a PO Box address
- if a contract lasts more than a year or is open-ended, the contractual conditions for terminating it.



# ECR

- Electronic Commerce (EC Directive) Regulations 2002
- the full name of your business
- the geographic address at which your business is established
- your contact details, including e-mail address
- details of any publicly accessible trade or similar register with which you are registered
- if your service is subject to an authorisation scheme or if you are a member of a professional body, details of the relevant supervisory authority or body

# ECR 2

- your VAT registration number
- where you refer to prices, a clear and unambiguous indication of those prices and whether the prices include taxes and delivery costs (but the DSRs also require you to quote prices inclusive of all taxes if the sale is covered by the DSRs).

# ECR 3

- Anti-spam provisions
  - Commercial communications must be clearly identified as such,
  - provide your identity as the person making the communication,
  - clearly identify any promotional offer or
  - promotional competition or game and ensure that terms and
  - conditions for participation are presented clearly.
- Requirements relating to the storing of the contract and for access to this by the consumer.
- Provision to enable the consumer to correct input errors prior to placing an order
- Consumers should receive acknowledgment of the receipt of the order electronically without delay

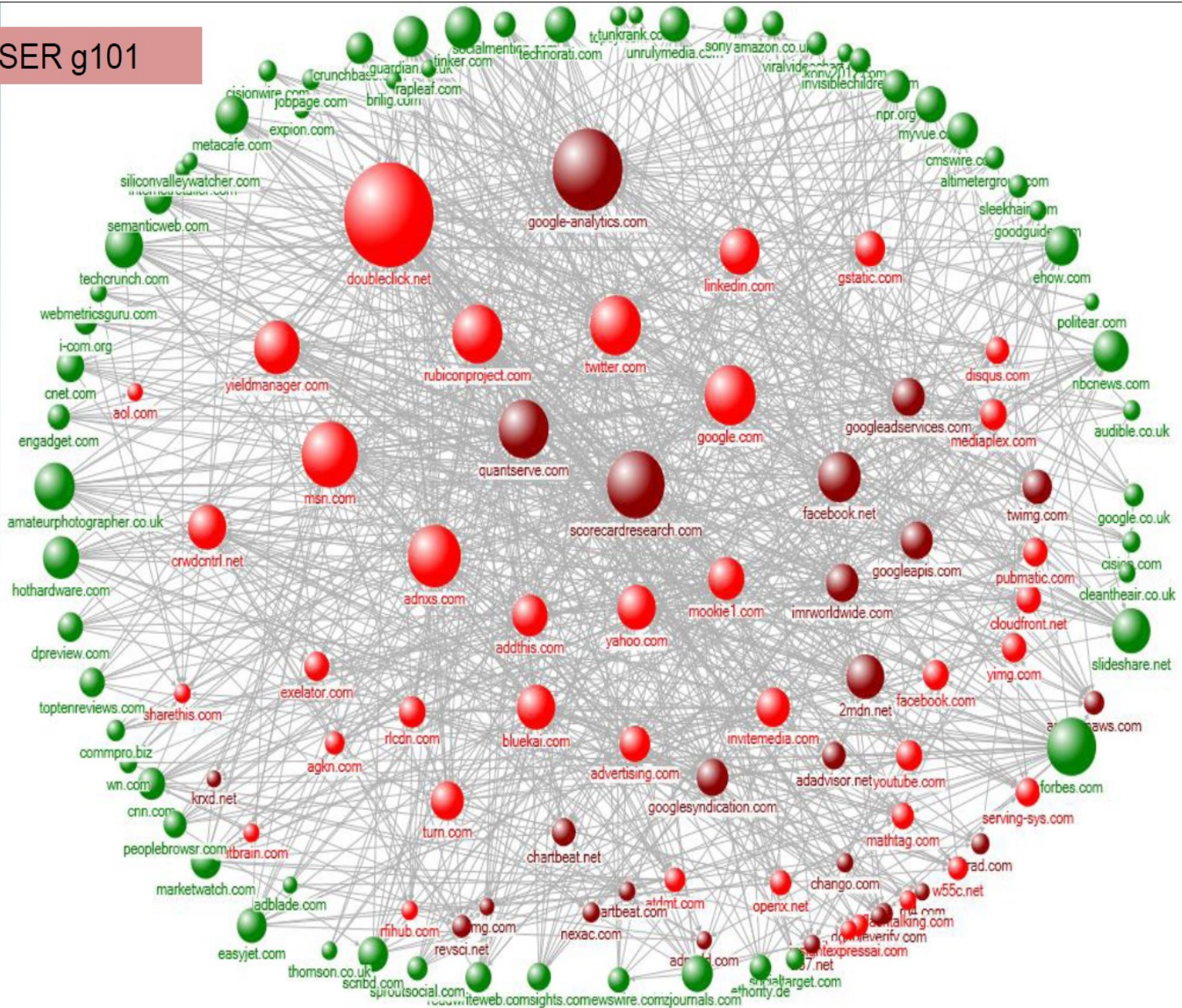
# Warranties

- EU law does not mandate a 2 year warranty
- But mandates a 2 year period for return of goods delivered faulty
- Cancellations by consumer:
  - 7 working days after delivery of goods or required information **now 14 days**
  - 30 days plus seven working days if no information is delivered

# VAT etc

- UK customers
- EU customers UNLESS they are registered for VAT and you have their VAT number
- Special cases
- Local sales taxes
  
- Revenue duty on Import converse of above
- Excise duties complex eg TV components

USER g101



# Cookies

- Must declare use
- Obtain explicit assent for 3<sup>rd</sup> party cookies each time

# Extracting Value

- Business models (= Where's the money?)
  - Landgrab
  - Merchant
  - PPV , Subscription, Freemium, Shareware etc
  - Market
  - Advertising hoarding
  - Lotteries & scams



# Land grab

- Maximise market share now; worry about profitability later
- Since there are not yet profits, stock market values the company (for a while) on number of customers
- Typical of new “Bubble” companies: cable TV, airlines, radio, Railways in 19<sup>th</sup> C, colonial exploration in 18<sup>th</sup> C
- Now discredited: later never comes
  - At least, not until the next bubble

# Merchant

- Sells goods or services for more than they cost
- Basic to most businesses
- Internet technologies add maybe 20% efficiency
  - Disintermediation
  - Lower cost market comms
  - Lower cost order taking
  - Lower cost distribution, esp for informational goods
  - “just in time” gives lower cost for stock and inventory
  - Better modelling and control
    - Mexican cement plant example
- BUT still must be a sound business!!!
  - Established players may be asleep, but are not dead

# PPV or Subscription

- Pay per View
  - E.g phone rates
- Subscriptions
  - Actuarial calculations
  - All you can eat models
  - Administration issues – charging model never says simple!
    - Matrix of services and products
    - Freebies etc
- Copying issues
  - Provide service
  - Street Performer Protocol

# Market

- Commission on other people's trades
  - No stock costs
  - Low barriers to entry
- Place for buyers and sellers to meet
  - eBay, B2B auctions, lastminute.com, bookfinder.com. Instinet
- Liquidity Liquidity Liquidity
  - Network effects
- Settlement issue
  - Paypal, CrestCo, Bolero
- Novel pricing models (e.g auctioning demand)
  - Agent technology
- Death of the portal

# Better ways to trade

- Networks effects
  - Single marketplace for each class of goods
  - Markets illiquid for large trades, inefficient for small trades
  - What is a “fair market”?
- Clearance and settlement
  - Issues for very large and very small trades
  - Warranties provided by CC & banks
    - Dispute resolution
  - Bearer certificates?
  - Tax and jurisdiction?
  - Privacy vs money laundering

# Advertising

- Typically rate £10 pcm (thousand impressions)
  - More for personalisation and targeted adverts
  - Advertising industry, and advertisers are very conservative
  - Monitoring
- High traffic sites
  - ISP home pages
  - Need to drive traffic to the site
  - Need to refresh site often/build community to keep users returning
- Agency sales
  - Google
- Market saturating
  - Rates dropping
  - Different formats
  - Flash inserts; streaming media
  - Email, digital TV etc

# Lightweight startups

- Virtual office and presence
- Cloud based resources (eg Amazon S3)
- Low hanging fruit
- Crowd sourced – Kickstarter
  - Establish market
  - Pre-sell product

# Lotteries and Scams

- Lotteries: tax on the ignorant
  - Poor estimate of low probability events
- Premium rate telephone scams
  - TV quiz shows and auctions
  - Phone this number to win...
- Straight frauds
  - Ponzi schemes (Pyramid sells)
  - Credit card and other personal details misuse
  - Telecom scams
  - Boiler room operations