E-Commerce - 7
Search Engines

Easily the most important marketing item
Complicated by highly personalised search results

Google
Try “Computer Science” - the lab comes on page 2
Try “Computer Laboratory” - the lab comes top
poor nomenclature in the marketplace
Try “Last minute holidays”

Algorithm
Page ranking (peer review)
Which led to scams (checks IP now)
Meta text, URL, page title, headings more important
Massively parallel retrieval, rank and search

Google AdWord campaigns
Driving traffic

Special targets
  UK Online - Parents and kids
  WorldPOP - 12 to 16 year old females
  actually paid by music industry

Adverts
  Click to win a car

Known URL
  www.microsoft.com

Freshness (even if just a date)
  Nothing sadder than ‘last altered June 1999”

Social networks
  Facebook, Twitter, etc
Logs and Audit

Who bought what and when
  I bought this from you and it's faulty
  Why have I been charged for this?

ISPs must keep records for RIP
  Regulation of Investigatory Powers

BCCi: The country’s most popular destination
  How do they know?

Ad costs
  Separate landing pages
  Per impression
  AdWords
  Effectiveness
Words mean what I want them to

Hit: Primitive object served by the server
   Or proxy request (not quite the same)
   Multiple object to the page
   Impression: Banner ad served - measured by counter

Page view: Pages or frames served

Click: deliberate action by the user
   Not refresh or script generated
   But timeout refreshes are interesting

Visit: multiple pages on site
   trajectory

Unique user / day

Exit popups
Answers depend on the questions

Audit
  Advertising returns and effectiveness
  Confirmation of transaction

Traffic analysis
  80% of the site is wasted

Confirming user behaviour
  Still need focus groups to find out why

Trend analysis
Data mining

Lots of data
  100 bytes / hit -> gigabytes / week
  Multiple sources: e.g. helpdesk, servers, proxy, telephone logs, radius logs, etc

Hits, clicks, page views, visits, trajectories, etc

Answers depend on the questions

Personalisation and localisation
  Models of the user
  Bins and profiles

Collaborative filtering
  X liked these so you’ll like them too

Affinity marketing
  Special offers from our carefully selected partners

Real-world matching
  Sainsbury’s data mountain
Communities

Chat
Bulletin boards
Social networking e.g. Facebook, etc
BBC
Amazon

Feedback and people feel good about it
  But beware false shoppers who are actually competitors
Typical behaviour

40% chat
   Maybe overstated because of frequent refreshes

10% mail, newsgroups, mail lists (75%)

5% help, admin, accounts, home page

3% search

2% favourite

Less than1% purchase (same as mail order)

Remainder fandom surfing
   40% “specialist content"
   30% shopping

Model (still) as ‘sad lonely geek’ BUT
Fastest growing demographic is women over 60
   Genealogy
Typical behaviour - 2

100,000 impressions

1% - 1000 clicks / new visitors
  about the same as mail shot
  CPC costs maybe $0.5 - $5

5% 50 register / trial
  depends how hard registration is

2% - 1 purchase

www.google.com/onlinechallenge
## Typical funnel

<table>
<thead>
<tr>
<th>Stat</th>
<th>Actual</th>
<th>% funnel</th>
<th>% conversions</th>
</tr>
</thead>
<tbody>
<tr>
<td>unique visitors</td>
<td>84867</td>
<td></td>
<td></td>
</tr>
<tr>
<td>new unique visitors</td>
<td>82170</td>
<td>96.82%</td>
<td>96.8%</td>
</tr>
<tr>
<td>% Unique Visitors = New</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unique download page visitors</td>
<td>15141</td>
<td>17.84%</td>
<td>18.4%</td>
</tr>
<tr>
<td>% New Visitors = Download</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>new registrations</td>
<td>4318</td>
<td>5.09%</td>
<td>28.5%</td>
</tr>
<tr>
<td>% Download = Registered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>new trial users</td>
<td>3192</td>
<td>3.76%</td>
<td>73.9%</td>
</tr>
<tr>
<td>% Registration = Trial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>new paying user</td>
<td>95</td>
<td>0.11%</td>
<td>3.0%</td>
</tr>
<tr>
<td>% Trial = Paying user</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cancelled subscriptions</td>
<td>17</td>
<td>0.02%</td>
<td>2.8%</td>
</tr>
<tr>
<td>% Total subscriptions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sales funnel

AIDA model:

Awareness  Interest  Desire  Action  Satisfaction
Prospects  Contact  Demo/Trial  Negotiate  Close  Satisfaction

Impression  Click through  Register/Demo  Purchase
Alphabet soup

CPC  Cost Per Click (what Google charges)
CPA  Cost Per Acquisition aka COCA
ARPU Average Return per User (in period)
CLV Customer Lifetime Value
Apps

Proliferation of devices
- iPhone, iPad, Andriod, Fire
  - appinventor.mit.edu/explore/
  - Facebook games, messaging games, etc

Controlled by vendor
- Limits revenue

Fashion (mostly)
- Top 10 list important
Social Media

Keep in touch

Human face

Consistent voice

Community

Feedback
Future

Mobile

TV

Clicks and mortar

Multiple devices

Adverts are annoying and don’t work - pop up hell

Content will no longer be free

Pay for E-mail
Conclusions

Invent your future

Go out there and build something

Sell it
Bonus material
Financing e-commerce

Raising money

Valuation

Winners and losers

Futures
Lean startup

Book ‘the lean startup’ by Eric Reis

Minimum viable product
  feedback

Early and frequent customer contact
  build the case that there is a viable market
  low hanging fruit
  ‘the best is enemy of the good’

Analytics
  understand the value to the customer

Virtual company
  fail early and cheaply

Agile engineering
  the web makes this possible easier, hackathons, crowdfunding
<table>
<thead>
<tr>
<th>Sources of finance</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family and friends</td>
<td>£50k</td>
</tr>
<tr>
<td>Banks (need security)</td>
<td>£100k</td>
</tr>
<tr>
<td>Angels</td>
<td>£250k - £500k</td>
</tr>
<tr>
<td>Venture capital</td>
<td>£2m - £25m</td>
</tr>
<tr>
<td>IPO</td>
<td>£50m - 250m</td>
</tr>
</tbody>
</table>
## Investor Criteria for a business

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Global sustainable under-served market need</td>
</tr>
<tr>
<td>Technical</td>
<td>Defensible technological advantage</td>
</tr>
<tr>
<td>People</td>
<td>Strong team</td>
</tr>
<tr>
<td>Financial</td>
<td>Believable plans, 60% IRR</td>
</tr>
<tr>
<td>Major Risks</td>
<td>Framework to understand and manage.</td>
</tr>
<tr>
<td></td>
<td>What do you know?</td>
</tr>
<tr>
<td></td>
<td>What do you know you don’t know?</td>
</tr>
<tr>
<td></td>
<td>How will you discover the things you don’t know you don’t know?</td>
</tr>
</tbody>
</table>
Writing the plan

1. Executive summary and funding requirement
2. Concept
3. The Market
   3.1 Global market size and need
   3.2 Sustainability
   3.3 Competition
   3.4 Marketing plans
4. The Team
   4.1 CEO
   4.2 CTO
   4.3 CFO
   4.4 VP Sales and marketing
Writing the plan - 2

5. The technology and IPR

6. Summary of Plans
   6.1 Development plans
      6.1.1 Methodology
      6.1.2 Milestones
   6.2 Marketing
   6.3 Sales and distribution
   6.4 Industry and quality standards

7. Financials
Writing the plan - 3

Appendices:
- Financial model
- Key staff
- Letters of support
- Correspondance re IPR
- Full development plan
- Full marketing and sales plan
- Examples and brochures
CAN YOU GIVE ME SOME COMMENTS ON MY BUSINESS PLAN?

SURE.

YOUR PLAN IS A HODGE-PODGE OF UNWARRANTED OPTIMISM ENCASED IN AN IMPENETRABLE FORTRESS OF BUZZ-WORDS.

WILL YOU LIKE TO READ IT?

THERE'S THAT UNWARRANTED OPTIMISM AGAIN.
Valuation

Estimate of future yield - risk assessment

Market
Assets
Ratio on current revenue
Ration on current profitability
Discounted Cash Flow (DCF)
NPV of profitability
Probability based methods
What goes wrong

Actual experience: not usually fraud
  angry customer phones up demanding to talk to someone korean at 3am
Bugs, blunders and incompetence
  free US flight for every hoover bought
Other places, other customs
  different laws; equities, porn, drugs, alcohol, fireworks, cigars
  product liability

**Traditional business risks still apply**

Still need traditional controls
  Double entry book-keeping
  Stock and accounting control
  Take up staff references
  Market analysis
Winners and losers

Winners
  - Communication and communities
  - Branded goods
  - Bricks and clicks
  - Specialty goods

Losers
  - Content is NOT king
  - Portals
  - Get-rich-quick sites
  - Smartcards, VOIP, interactive TV
Zuckerberg’s letter to investors

Five core values for how we run Facebook:

Focus on Impact
If we want to have the biggest impact, the best way to do this is to make sure we always focus on solving the most important problems. It sounds simple, but we think most companies do this poorly and waste a lot of time. We expect everyone at Facebook to be good at finding the biggest problems to work on.

Move Fast
Moving fast enables us to build more things and learn faster. However, as most companies grow, they slow down too much because they’re more afraid of making mistakes than they are of losing opportunities by moving too slowly. We have a saying: “Move fast and break things.” The idea is that if you never break anything, you’re probably not moving fast enough.

Be Bold
Building great things means taking risks. This can be scary and prevents most companies from doing the bold things they should. However, in a world that’s changing so quickly, you’re guaranteed to fail if you don’t take any risks. We have another saying: “The riskiest thing is to take no risks.” We encourage everyone to make bold decisions, even if that means being wrong some of the time.

Be Open
We believe that a more open world is a better world because people with more information can make better decisions and have a greater impact. That goes for running our company as well. We work hard to make sure everyone at Facebook has access to as much information as possible about every part of the company so they can make the best decisions and have the greatest impact.

Build Social Value
Once again, Facebook exists to make the world more open and connected, and not just to build a company. We expect everyone at Facebook to focus every day on how to build real value for the world in everything they do.
Futurology

Integration of the Infosphere

Thesis / antithesis / synthesis

Better ways to trade

End of Moore’s Law
Integration of the infosphere

.NET (www.microsoft.com/net)
  Moving functionality into the network (Saas)
  Disintermediating ISPs and Telcos
  SOAP & RPC

Google competes heavily
  discovery of intent

7 Big functions
  Identity
  Payment
  Diary
  Message delivery
  Address book
  Storage
  Search / DRM / content management / favourites / history
Integration of the infosphere

New services and devices

Smart consumer
  - Dynamic bid for bandwidth
  - Toasters bid for electricity

ipV6

Smart TV, white goods, cars, toaster, toilets
  - “do you really want to have your third cup of coffee today?”

Home nets / LTE (4g)

P2P stuff - death of copyright

Privacy issues

Infrastructure capacity issues
Thesis / antithesis / synthesis

Thesis
- Unlimited communications and publications

Antithesis
- Entropy (99% of everything is crud - Theodore Sturgeon)

Synthesis
- No good solutions at present
  - search engines
  - personal agents
- University connectivity
  - Pandora's box?
  - Virtual reality?
Better ways to trade

Perfect information <> Perfect market
   Effective monopolises (amazon, eBay)
   Market and auction structure

New models
   kickstarter
   time and demand sensitive

Global
   Security
   New currencies / bearer certificates
   Cell phone banking, market prices in Africa
Death of Moore’s Law

Geometry reduction nearing limits
  Leakage, quantum effects

Massive parallelism only works for somethings

Bandwidth demand growing faster
  Return to local data
  Text -> Pictures -> video -> HD -> UHD -> UHD VR
  Universal connectivity
### Privacy pendulum

Conflicts between local and central control

<table>
<thead>
<tr>
<th>Phase</th>
<th>Main frame</th>
<th>Mini computer</th>
<th>Desktop</th>
<th>Laptop</th>
<th>Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>network</td>
<td>stand alone</td>
<td>stand alone</td>
<td>low speed network 10Mb/s</td>
<td>high speed network 100Mb/s</td>
<td>Wifi / 4g 100Mb/s</td>
</tr>
<tr>
<td>central datastore</td>
<td>department</td>
<td>individual</td>
<td>Company database Private Network</td>
<td>Data centre</td>
<td></td>
</tr>
</tbody>
</table>