



Future Search: From Information Retrieval to Information Enabled Commerce

William I. Chang
wchang @ baidu.com

I.E.C. in Our Daily Lives

- Restaurant menus
- Zagat, Michelin
- Shopping guides
- Supermarket aisles
- TV Guide
- Physician's Desk Reference
- ...

Early History

- Related keywords: Commerce Revolution, Mercantilism, Information economy
- Local: Yellow Pages 1886 Reuben H. Donnelley
- Local classifieds
- Mail order: Sears Catalogue 1888 for farming supplies with clearly stated prices; 322pp by 1894 featuring sewing machines, bicycles, automobiles, dolls, stoves, groceries
- Postal service considered as national commerce infrastructure
- Credit cards: consumer protection and data mining
- Direct marketing
- Development of advertising as a near science: print, radio broadcast, TV...

Technology and Internet

- WalMart real-time transaction tracking and inventory management; scale and speed
- Amazon: UGC reviews and recommendations, common business platform/cloud
- eBay: UGC product descriptions; reputation as information
- Wikipedia, dpreview.com
- Expedia, Priceline...
- Digital goods: iTunes, Kindle
- Craigslist
- Groupon, Yelp...

Search Engines

- Yahoo! Directory
- Lycos crawler, AltaVista big index, Excite, HotBot
- Infoseek (1996-1999)
 - OR queries
 - Phrase inference and query rewriting
 - Banner ads tied to search keywords
 - Real-time addurl
 - Anti-spam (adversarial IR)
 - Hyperlink voting and anchor text indexing
 - Log analysis and query suggestion
- Goto.com/Overture paid placement
- Google ad platform: AdWord, AdSense



Search as Media

- Working definition of a “media company” (1997)

A media company’s business is to help other businesses build brands, and a brand is the total loyalty of the company’s customers. A “new media company” does this by leveraging the interactive nature of the Internet to enable users to communicate with one another....

- Media companies typically give away valuable content

China Economics: Outline

- The Background – demographics, society, culture, language
- The Economy – why China is such a prize
- The Prize – ... and how great is it?
- The Money – a few successful business models
- The Media and Multimedia – news, community and content
- The People and Their Daily Lives – showcase websites

The Background

- Economic reality: only 15% of Internet users earn \$5000/year
- Inflation at 5%, spurts of hyper-inflation especially in cities
- Education and personal aspiration: illiteracy virtually none but higher education only 22%, many top students went abroad
- Competition fierce in school and later in work, no staying in place
- Career advancement in order to improve standard of living
- Gender equality: one child policy, maternity protection
- Entrepreneurial spirit: over 10 million small businesses; 800,000 with annual revenue > \$1 million
- Pictograph language and “pinyin” romanized input



The Economy

- GDP grows 10% annually as far back as young people can remember
- Ratio of Consumer Spending : Construction: Export = 2:2:1
- Population gradually shifting to cities, fueling urban growth (more efficient marketing and distribution)
- Worker wages and benefits are increasing rapidly
- Buying power of the RMB is undervalued by factor of 2-3
- Despite a tradition honoring “Old Brands”, there are very few new domestic brands and little marketing know-how
- Consumers want quality, but products compete on price
- Domestic commerce still nascent, lacking IEC tools 

The Prize

- Highly developed Internet in user and usage count, huge growth, still only 30% penetration: 420 million users, 85% broadband, 35% mobile, average 20 hours/day
- Successful integration of online, mobile, and offline services
- Multiple payment methods: COD, online banking, escrow
- Micro-payments through phone and wireless service providers
- Inexpensive but under-regulated private-sector shipping/delivery
- High potential in terms of revenue and profits?
- Extremely crowded in terms of competition and imitation
- High cost of computing resources and bandwidth
- Large but inexperienced workforce



The Money

- Half the Internet population is under 25
Tencent QQ, virtual currency, real economics
Online games Shanda, Giant etc: it take money to fight a war
- Half the Internet population is over 25
Taobao/Alibaba already 1% of GDP, dominates B2C goods
Baidu web search, dominates B2C services (health, education)
- China Mobile: everyone uses it, and for almost everything
- Ctrip: integration of online, mobile, offline services
- Convergence? Directory assistance on steroids?

The Media and Multimedia

- The business of Chinese media is entertainment
- Political events juxtaposed against celebrity news
- Online communities and mobile SMS are the pervasive and prevailing means of public expression
- Court of public opinion is sometimes to be feared
- Government tries to manage, and also to listen
- Adult and violent content, copyright violation... will probably one day be solved
- Free music, images, video entertainment are waiting for a legitimate business model to develop

The People and Their Daily Lives

- The four “necessities”
 - Shelter
 - Transportation
 - Restaurants
 - Fashion and cosmetics
- Investment
- Education
- Healthcare

Baidu

- Aladdin: Open Search Platform
- iKnow: Open Q&A Platform
- Ark: Open Product Database
- Map++

Baidu Aladdin: Travel



[新闻](#) [网页](#) [贴吧](#) [知道](#) [MP3](#) [图片](#) [视频](#) [地图](#) [更多](#) ▾

天津到杭州

百度一下

[设置](#) | [手写](#)

[把百度设为首页](#)

天津到杭州的机票查询

出发城市 目的城市

航班类型 单程 往返

出发时间

[携程网查询](#)

[去哪儿网查询](#)

[同程网查询](#)

open.baidu.com/ - [百度搜索开放平台](#)



Baidu Aladdin: Housing

[百旺茉莉园](#) [楼盘详情](#) [二手房](#) [租房](#) [房价](#) [新浪房友在线](#)



小区均价: 24105元/平 本月走势: ↓0.54%

小区位置: 海淀区西北旺镇区永丰路西**百旺**新城

小区评论: 优美园林景观设计, 高素质生活群体, 生活气息温馨。

[二手房源信息371条](#) [租房信息17条](#) [业主论坛](#)

bj.fangyou.com -  百度搜索开放平台

Baidu Aladdin: Shopping

 [新闻](#) [网页](#) [贴吧](#) [知道](#) [MP3](#) [图片](#) [视频](#) [地图](#)

数码相机 购买 [设置](#) | [高级搜索](#)

把百度设为首页

[数码相机 购买](#) [208款热卖单品](#) [图片](#) [诚信商家](#) [最新报价](#)

优质商家	商品数量	服务保障
京东商城数码相机	520款	7天退换货 全国联保 正规发票
当当网数码相机	216款	7天退换货 全国联保 正规发票
新蛋网数码相机	135款	7天退换货 全国联保 正规发票
卓越亚马逊数码相机	86款	7天退换货 全国联保 正规发票
新世纪电器网数码相机	80款	7天退换货 全国联保 正规发票

open.baidu.com/ - [百度搜索开放平台](#)



Baidu iKnow: Open Platform Partners

教育

游戏

生活

汽车

医疗



A Few More Ideas

- Mobile shopping recommendations
- Shopping malls -> directory and navigation
- Publishing house -> certification business

Conclusions

- Commerce revolution accompanied by information revolution
- Depends critically on information quality and security
- Brand building is key
- UGC is good
- Novel business models to come



Thank you

wchang @ baidu.com