

Consumer Customers



Conflicting interests



- Consumer tries to maximize consumer surplus, CS
- Consumer's utility (=willingness-to-pay) from a product is dynamic
- Producer tries to maximize producer surplus, profit, p-c
- Social planner tries to maximize social welfare, u-c



Utility function for single consumer, single good



- u(x) is typically increasing and concave
- Consumer chooses x(p) because of maximal net benefit
- Cummunications expenditure is small wrt total income
 ⇒ Utility of communications is quasilinear wrt income
 ⇒ Level of income has little impact on u(x)



Demand curve for single consumer, single good



- Demand curve (D) and supply curve (S) meet at equilibrium
- Consumer surplus CS(p) = u(x(p))-px
- For simplicity, demand curve, i.e. marginal utility u'(x) is drawn as a straight line



Multiple consumers and goods/services

• Consider a market with *n* customers selecting from *k* services

 $CS_i = \max_x \left[u_i(x) - px \right]$

Vector quantity of services, $x = (x_1, ..., x_k)$ Customer *i* belongs to $N = \{1, ..., n\}$ Assume $p(x) = \sum_i p_i x_i$, for a vector of prices $p = (p_1, ..., p_k)$

- Demand function for customer *i* is $x^i(p)$, given vector *p*
- Aggregate demand function is $x(p) = \sum_i x^i(p)$, total demand
- Consumption may cause side-effects (externalities)
- Service demand may depend on other services (cross elasticity)
 - Substitutes
 - Complements



Positive Network Effect: Example

- Assume market of *N* potential customers, N = 100
- Willingness to pay, utility, $u_i(n) = ni$, i = 1...N
- Market is dynamic, i.e. refunding works well
- Given price *p*
 - **X** Potential equilibrium of demand is at n customers
 - **X** The "indifferent" customer is i = N-n
 - **×** For $u_i(n) = p = ni = n(N-n)$
 - ✗ Demand curve shows three possible equilibria: 0, A, B



- Perturbation at A leads to 0 or B which are stable equilibria
- Market failure happens unless positive feedback brings to B
- Setting the price p defines the critical mass of customers n_1 needed for success
- Derivative on social welfare is positive at n_2 ..100 (social subsidies justified!)

Source: Courcoubetis&Weber/2003



Consumer service portfolio

Home telephone

• Number to family/location (analog, ISDN, VoIP)

Home Internet

- PC broadband Internet access (copper, cable, fiber, WLAN)
- Value-added services (email, home page, security, ...)

Home TV/radio broadcast

- Signal source (cable, terrestrial, satellite)
- Signal type (analog, digital/MPEG, digital/IP streaming)

Personal cellular handsets

- Personal life management
- Services bundled on SIM card (GSM, WCDMA)



Household spending Relative proportions of categories





Household spending

Communication as % of household consumption (OECD average)





Media consumption

Mobile is not yet recognized



Source: Mediacom 2002, OMD Research 2001, Suomen Gallup 2002



Kids adopting the mobile culture

(% of age class)



Source: Lapset, nuoret ja matkaviestintä 2000-2002



Case Japan: Daily Usage Time

Mobile Internet

Minutes/day	Female	Male	Overall
<5	48.28	56.07	53.85
5-10	22.06	19.86	20.49
10-20	13.78	9.88	10.99
20-30	8.20	5.74	6.44
30-60	4.68	4.25	4.37
60-90	1.27	1.44	1.38
>90	1.72	2.76	2.46

- More than 50% of users use less than 5 min per day
- No clear correlation
 - time of day vs. target content
 - amount of usage vs. target content

Source: MoCoBe.com survey, 2003

Case Japan: Daily Usage Location



- Usage follows the duration of presence (except commute)
- No clear correlation between location and content

Source: MoCoBe.com survey, 2003



Case Japan: Usage Summary

Mobile Internet

- Personality drives the usage patterns, not location or time
 - contextual marketing should focus on personality
- 73% of users consider email/chat as #1 app
 - ringtones/pictures is #2 with 6% of respondents
 - email is a killer app!
- Only 26% of users pay extra for mobile Internet content
 - 60% of those who pay extra, pay less than 4 USD/month

Framework of consumer orientation





Two Types Of 'Fun' Reversal theory

Consumers make a distinction between two types of 'Fun' in relation to entertainment. <u>Fun I</u> is active, stimulating and exciting, to escape from boredom. <u>Fun II</u> is more passive, relaxing and calming to escape from stress. People use Media and Entertainment alternately to create these moods. <u>Younger</u> identify more with <u>Fun I</u> and <u>Older</u> with <u>Fun II</u>.



Source: 'Reversal Theory', Michael Apter

