

Lecture Note I-5 Recognizing Lock-In

- Measure switching cost
- Classification of Lock-In
- Lock-in cycle

Recognizing Lock-In

- Is Internet economy is friction-free economy ?
- Cost of switching
 - Your choices for the future will be hampered by the selections you made in the past
 - Buyers typically must bear costs when they switch from one information systems to another
- Compare
 - Ford v. GM (low switching cost)
 - Mac v. PC (high switching cost)

What's the Difference?

- Durable investments in complementary assets that are specific to that brand of machine (e.g. hardware, Software)
- Dynamics:
 - Supplier wants to lock-in customer
 - Customer wants to avoid lock-in
- Basic principle: *Look ahead and reason back*

Examples

- Bell Atlantic's digital switch equipment
 - Competitors: AT&T, Northern Telecom and Siemens
 - Final Decision : Bell Atlantic invested \$3 billion in AT&T's 5ESS digital switch which used proprietary operating system
 - Large switching costs to change switches
 - Recognize 888 Toll-free \$8million
 - Offer voice dialing \$10 million
 - 30~40% switch related revenue
- Computer Associates
 - Leading supplier of software that work with IBM's MVS and VSE/ESA
 - The third largest software company (behind MS and Oracle)
 - Rival :Legend corporation

Small Switching Costs Matter

- Example
 - Phone number portability
 - Email addresses
- Emergence of new business model: Hotmail
 - advertising, portability
- New service: ACM, CalTech
 - offer e-mail forwarding as a way to avoid address lock-in
 - Keep in with members and alumni
- Evaluation: Compare switching costs to revenue on a **per customer** basis

Valuing an Installed Base

- Total cost of switching = costs the customer bears + costs the new supplier bears (from the perspective of the new supplier)
 - Customer C switches from A to "same position" with B
 - **Total switching costs = customer costs + B's costs**
- Example
 - Switching ISPs costs customer \$50 new ISP \$25
 - New ISP make \$100 on customer: induce switch
 - New ISP makes \$70 on customer: don't induce switch

Analytics of Switching Cost

- Market structure
 - Perfectly competitive market with many identical firms
- parameter:
 - p : price
 - c : ISPs' marginal cost
 - s : customer's switching cost (cost to change ISP)
 - d : discount for switching
 - r : interest rate (monthly)

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Competitive market equilibrium

- Customer's decision

No difference choice

$$(p-d) + p/r + s = p + p/r$$

↑
switched
↑
Not switched

$$\Rightarrow d = s$$

- ISP's decision

Zero profit

$$(p-c) - s + \frac{p-c}{r} = 0$$

$$\Rightarrow d = s = (p-c) + \frac{p-c}{r}$$

$$\Rightarrow p = c + \frac{r}{1+r} s$$

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Profits & Switching Costs In General:

- Profits from a customer = [total switching costs] + [quality/cost advantages]
- In commodity market like telephony
 - profit per customer = total switching costs per customer
- Use of this rule of thumb
 - How much to invest to get locked-in base
 - Evaluate a target acquisition (e.g., Hotmail)
 - Product and design decisions that affect switching costs

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Classification of Lock-In

- Contractual commitments: Compensatory or liquidated damages
- Durable purchases: replacement, declines with time
- Brand-specific training: rises with time
- Information and data: rises with time
- Specialized suppliers: may rise
- Search costs: learn about alternatives
- **Loyalty programs**: rebuild cumulative usage

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Contractual Commitments

- "Requirements contract":
 - Purchase supplies from one supplier
 - Minimum order size commitment
 - Guarantee (price, quality)
- Beware of "evergreen contracts"
 - Automatically renew sixty or ninety days before initial ending date

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Durable Purchases

- Aftermarket sales (supplies, maintenance)
- Depends on (true) depreciation
- Usually fall with time
- Watch out for multiple pieces of hardware
 - Supplier will want to stagger vintages
 - Contract renewal
- **Technology** lock-in v. vendor lock-in

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Brand-specific Training

- How much is transferable?
- Example: Software
- Competitors want to lower switching costs
 - Eg. Help systems
 - Borland Quattro Pro aimed at Lotus 1-2-3
 - Word aimed WordPerfect
- Customers desire to standardize all of their equipment by using a single vendor
 - E.g. Fleet commonality

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Information & Databases

- Information and database grow over time
- Lock-in to grow stronger with time
- Vendors' strategies : raise or lower consumers' switch cost and capitalize on the crucial distinction between proprietary and standardized formats
- Consumers' strategy: keep control of information and databases by using standardized formats and interfaces

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Specialized Suppliers

- With specialized equipment, the switch costs depends on the ability of new suppliers to offer comparable equipment when needed in the future
- Examples
 - NASA's suppliers, advertising, legal, accounting firms
- Purchasers' strategy: Dual sourcing
 - IBM (Intel and AMD)

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Search Costs

- Especially, Mass market
- Transactions cost in finding new suppliers
 - Psychological costs, time and effort to find a new supplier, risk cost
- Also costs borne by the new supplier
 - Promotion, closing deal, setting up account, credit risks
- Example: Credit Cards
 - Costly to attract new accounts
 - Danger of adverse selection
 - \$100 million in receivables would be worth about \$120 million
 - Market valuation of "loyalty"

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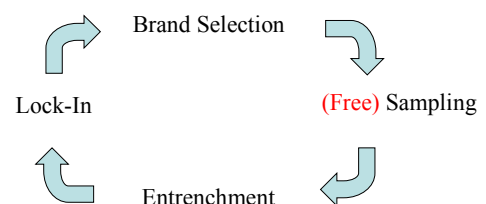
Loyalty Programs

- Constructed by firm
 - Frequent flyer programs
 - Frequent coffee programs
- Personalized Pricing
 - Gold status in airline
- Affiliation
 - Amazon Associates Program
 - Referral fee: 5+1/8 %
 - B&N's Affiliates program
 - Referral fee: 7 %
 - Add nonlinearity?
 - Cumulative referrals
 - Give payoff only after some milestone

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Lock-in cycle



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Summary

- Switching costs are ubiquitous
- Customers may be vulnerable
- Value your installed base
- Watch for durable purchases
- Be able to identify 7-types of lock-in