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Marketing High Technology Products and Innovations

Book · January 2005

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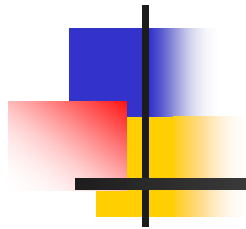
Some of the authors of this publication are also working on these related projects:



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Marketing of High-Technology Products and Innovations

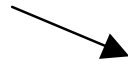
Jakki J. Mohr



Chapter 6: Understanding High-Tech Customers

Critical Issues in Understanding High-Tech Customers

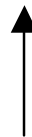
Factors that determine who desirable customers are.



Factors that affect purchase decision



Factors that affect timing of purchase decision





Chapter Outline

- Customer Purchase Decisions
 - Factors Affecting Technology Adoption
 - Categories of Adopters
 - The Chasm
- Choosing A Customer Target
 - Market Segmentation Process
- Customer Strategies to Avoid Obsolescence
 - Migration/Upgrade Decisions

Adoption and Diffusion of Innovation:

Factors Affecting Rate of Adoption

- Relative Advantage
 - Benefits of adopting the new technology compared to the costs
 - Implication: Marketers must understand customer perceptions of benefits vs. costs
- Compatibility
 - Similarity to existing ways of doing things
 - Compatability with cultural norms
 - Implication: Marketers must educate customers if compatibility is low



Factors Affecting Rate of Adoption (Cont.)

- Complexity
 - Difficulty of use of new product
 - Implication: Try to simplify use; offer training and education
- Ability to communicate product benefits
 - Ease and clarity of communicating benefits to prospective customers
 - Implication: Talk in terms customers understand and that meaningfully convey the compelling reason to own the new technology



Factors Affecting Rate of Adoption (Cont.)

- Observability
 - Customer's ability to assess benefits
 - Ability of others to observe customer's benefits obtained from using new product
 - Implication: If benefits are elusive to both the users and their friends, rate of adoption will be slow.



Final Thoughts on Adoption

- These five factors are crucial hurdles to overcome in effective marketing.
- Marketers must provide compelling reasons for adoption, and overcome customers' fear, uncertainty, and doubt.
- Traditional marketing methods (which assumes customers understand the usefulness of the products and know how to evaluate them) are often insufficient.
 - Often, must focus more on educating potential users about benefits and how to use new product

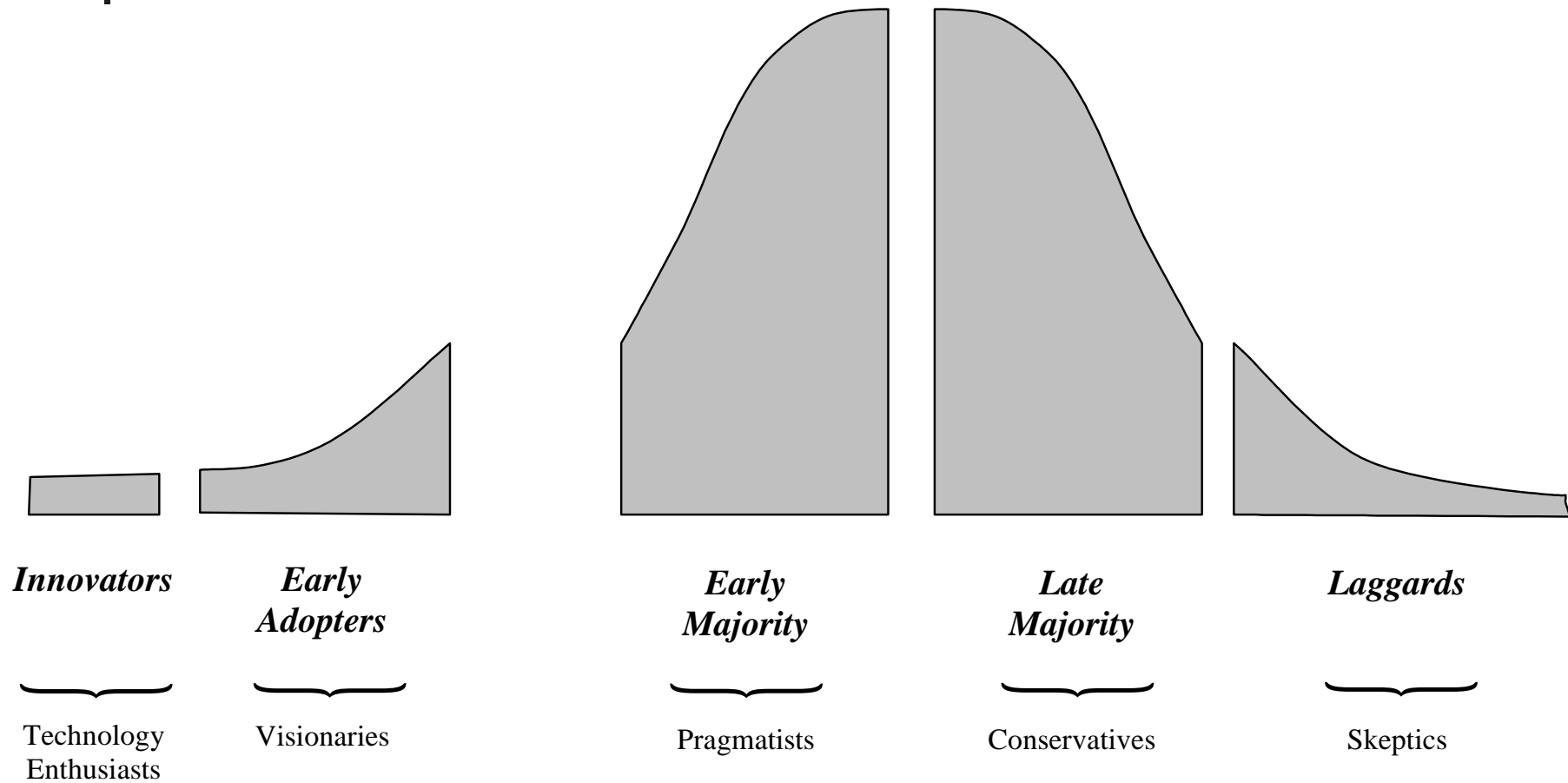


Final Thoughts on Adoption

- Involve customers in evaluating new product ideas
- Don't base assessment on inventor's familiarity with, and enthusiasm for, technology.
- Understand who is likely to be an early adopter, and how they differ from the mainstream market.



Categories of Adopters





Innovators: Technology Enthusiasts

- Appreciate technology for its own sake
- Motivated by idea of being a change agent
- Will tolerate initial glitches
- Will develop make-shift solutions
- Willing to alpha/beta test and work with technical personnel
- Provide early revenue for marketers—but not a large group
- Importance: They are the gatekeeper to the next group of adopters



Early Adopters: “Visionaries”

- Want to revolutionize competitive rules in their industry
- Attracted by high-risk/high-reward projects
- Not necessarily very price sensitive
- Demand customized solutions and intensive tech support
 - Will supply missing elements of total solution
- Product Form Competition: Between categories of solutions
- Early adopters communicate horizontally (across industry boundaries)



Early Majority: “Pragmatists”

- Comfortable with only evolutionary changes in business practices, in order to gain productivity enhancements
- Averse to disruptions in their operations
- Want proven applications, reliable service
- Buy only with a reference from trusted colleague *in same industry*



Pragmatists (Cont.)

- This group is the bulwark of the mainstream market:
 - They want to move together (herd mentality)
 - They want to pick the same technology solution (avoid risk)
 - Once they make a decision, they want to implement it quickly.
- Requires industry standards



Late Majority: “Conservatives”

- Risk averse, technology shy
- Very price sensitive
- Require completely pre-assembled, bullet-proof solutions
- Motivated only by need to keep up with competitors in their industry
- Rely on single, trusted advisor



Laggards: “Skeptics”

- Want to maintain status quo
- Technology is a hindrance to operations
 - Luddites
- Buy only if all other alternatives worse



Target Innovators or the Early Majority?

- Target the majority when:
 - Word of mouth effects are low
 - Consumer products industries (vs. b-to-b)
 - Low ratio of innovators to majority users
 - Profit margins decline slowly with time
 - Long time period for market acceptance



What is the “Chasm?”

- Gap between early market and mainstream market—
 - Visionaries vs. Pragmatists
- Visionary market is saturated, but mainstream not yet ready to buy.
- Marketing that was successful with visionaries simply is not effective with pragmatists



Visionaries vs. Pragmatists

- Visionaries

- Adventurous
- Think/spend big
- Want to be first in implementing new ideas in their industries
- Think pragmatists are pedestrian

- Pragmatists

- Prudent; stay within zone of "reasonable," and within budget
- Make slow, steady progress
- Think visionaries are dangerous

These two groups want no part of each other!



Early Market Strategies: Marketing to Visionaries

- High level of customized tech support given to visionaries pulls firm in too many directions--costly
 - Yet, it's a catch-22, because this is the initial source of revenue
- Products sometimes released too early
- Vendor goal: Establish reputation
- Exciting time!
 - Engineering drives, brilliance is rewarded.
 - Focus on developing the best possible solution



The Chasm

- Firm takes on more visionaries than it can handle.
- Cannot take on more custom projects, but no pragmatists ready to buy.
- Early market becomes saturated, and revenue growth tapers off or declines
- Key personnel become disillusioned
- VC well begins to runs dry
- Marketing strategies that lead to success in selling to visionaries actually hinder success in selling to pragmatists

Goal: Minimize time in the Chasm



- Look to the new strategies necessary to reach the mainstream market
- Pick a single target market with specific application
- R&D must:
 - build interfaces to legacy systems
 - work with partners
 - ride the line between service and engineering



Marketing to Pragmatists

- Vendor must assume total responsibility for complete, end-to-end solution (“whole” product)
 - Hardware, software, connectivity, training, support, etc.
 - Requires significant work with partners
 - Develop standards and compatibility
- Customer service vital
- Focus on best solution possible
 - (rather than best possible solution)
- Simplify complex product features



Marketing to Pragmatists (Cont.)

- Brand Competition: between vendors of different brands of the new technology
 - A sign of legitimacy for the new technology
- Complement strong technological skills with strong partnering skills
 - Find partners to round out product offering
 - Partner power changes with market evolution



Marketing to Conservatives

- Make product simpler, cheaper, more reliable, convenient



Crossing the Chasm Summary

- The whole product is the critical success factor
- Until a high-tech firm has established itself in the mainstream market, it has not proven itself.
- To manage the mainstream market effectively, firm must work with partners in a disciplined fashion (that prioritizes partners)



More on the Mainstream Market: Inside the Tornado

- Firms that are successful in crossing the chasm typically experience dramatic sales increases when they enter the mainstream (pragmatist) market.



Three phases in the “tornado” of growth

- 1. The Bowling Alley:
 - New product gains acceptance from niches within the mainstream market
 - Each niche requires expertise in that vertical market, and potentially leads to access to related markets.



Three phases in the “tornado” of growth

- 2. The Tornado:

- Period of mass-market adoption when the general marketplace switches over to the new technology
- Driven by application that provides compelling benefits to mass market: the “killer app”
- Requires strong operational excellence to keep up with demand



Three phases in the “tornado” of growth

- 3. “Main Street”
 - Market growth stabilizes
 - Focus on cross-selling and upgrading to existing customers



Selecting a Market Segment

- Must identify the best “beachhead”
 - A single target market from which to pursue the mainstream market
 - Cannot afford to pursue many segments at once



Steps in Market Segmentation

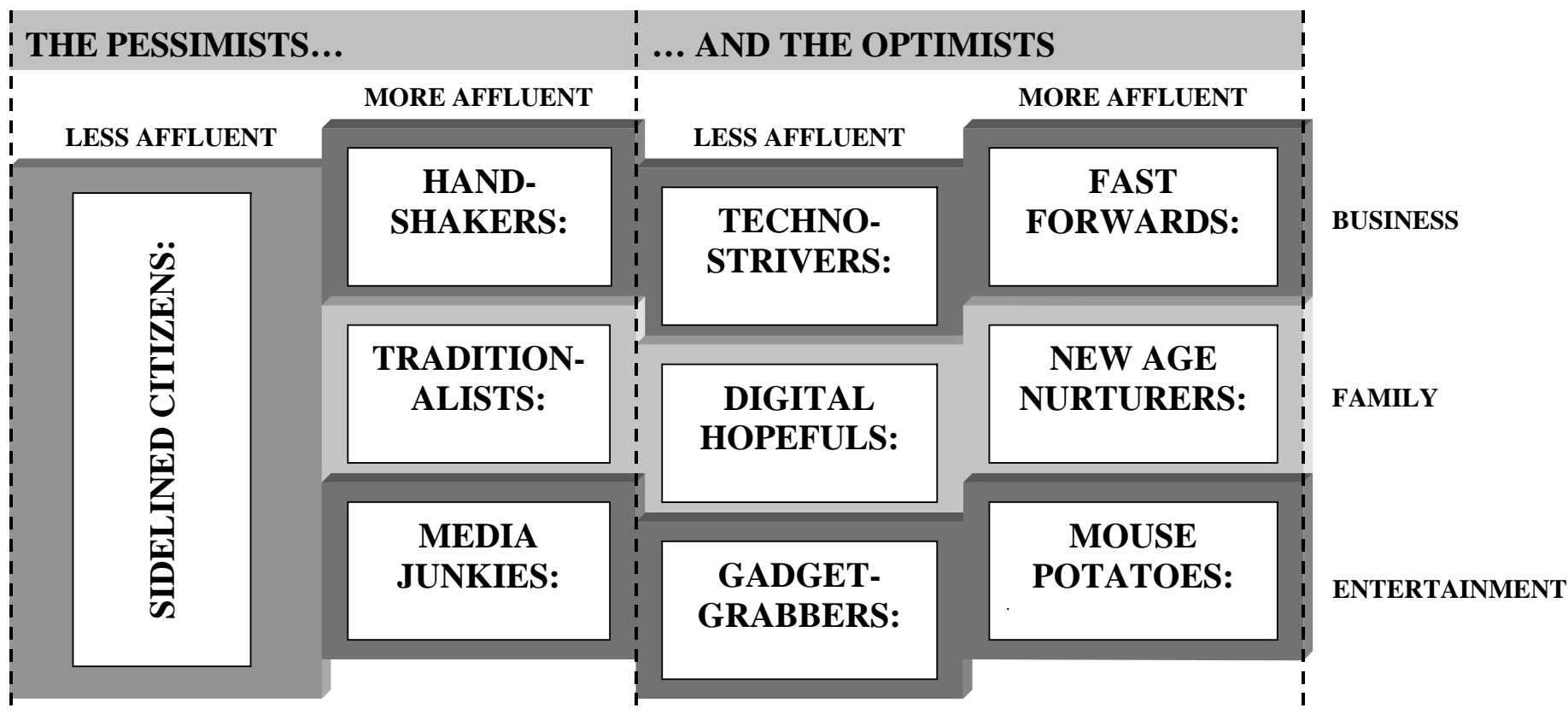
- 1. Divide market into groups based on common characteristics
 - Demographics
 - Geographics
 - Psychographics (Values and lifestyles)
 - Behavioral Variables
 - Useage Volume
 - Benefits Sought
 - Useage Occasion



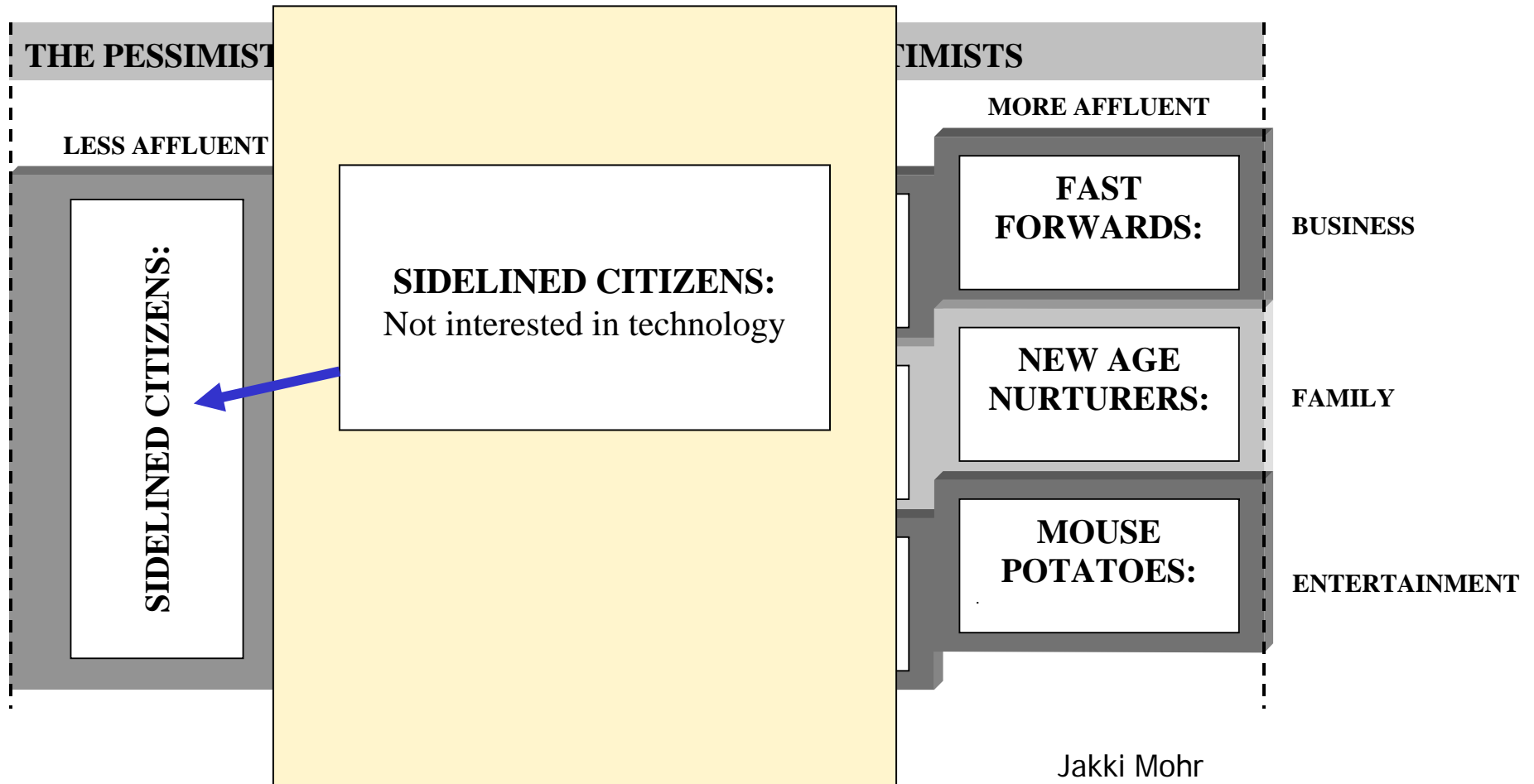
Steps in Market Segmentation

- 2. Profile (describe) customers in each segment

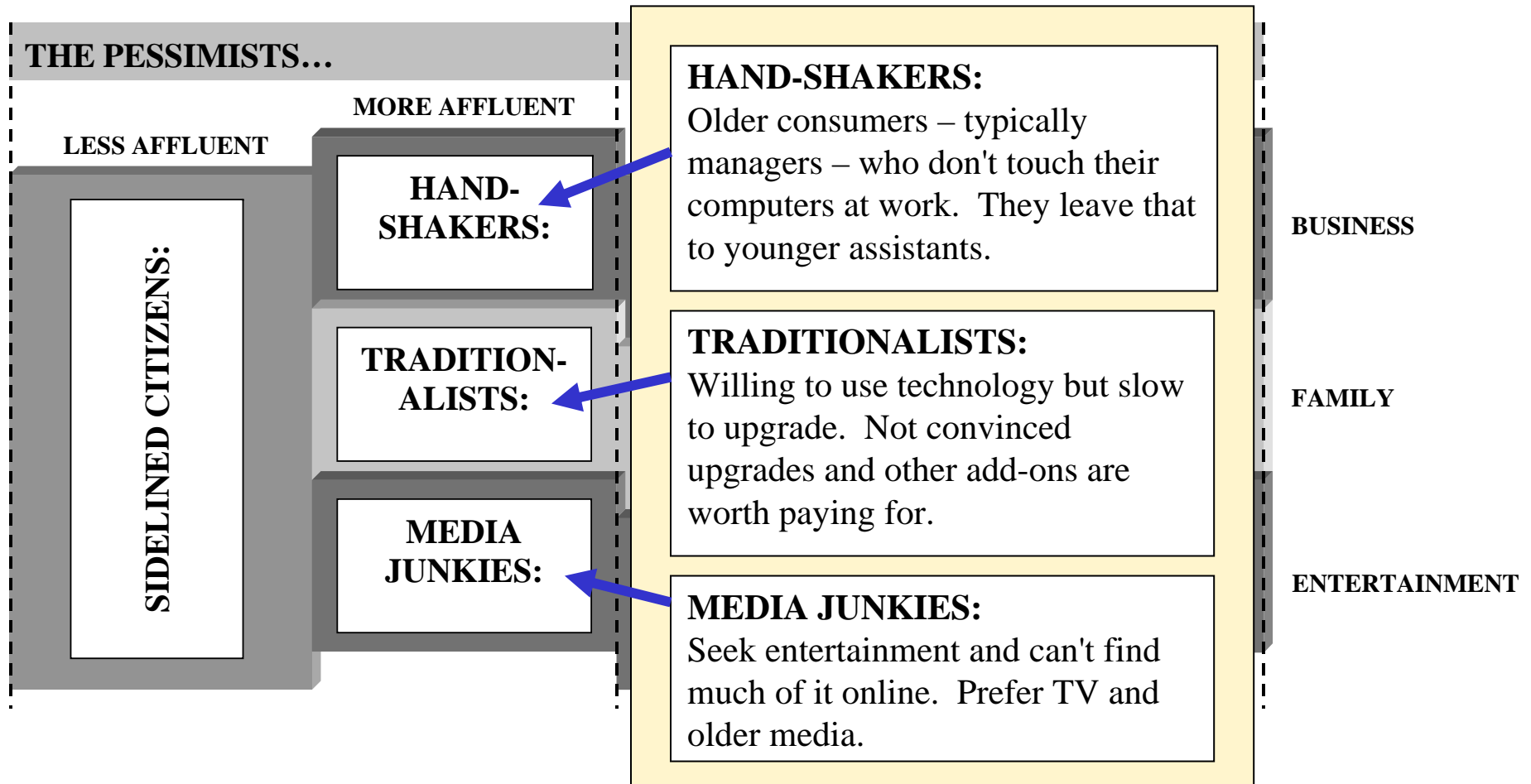
Examples of Tech Customer Segments: "Technographics"



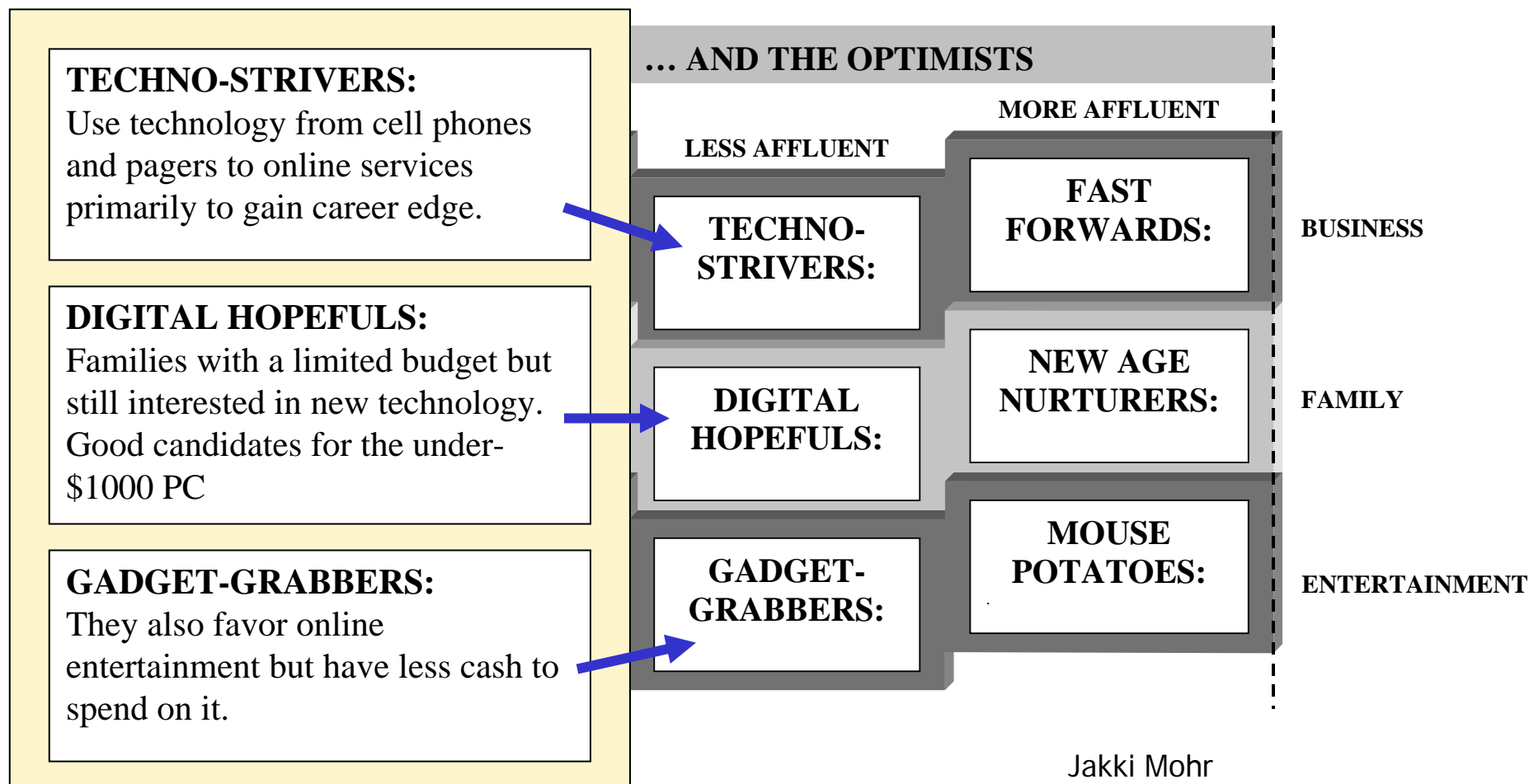
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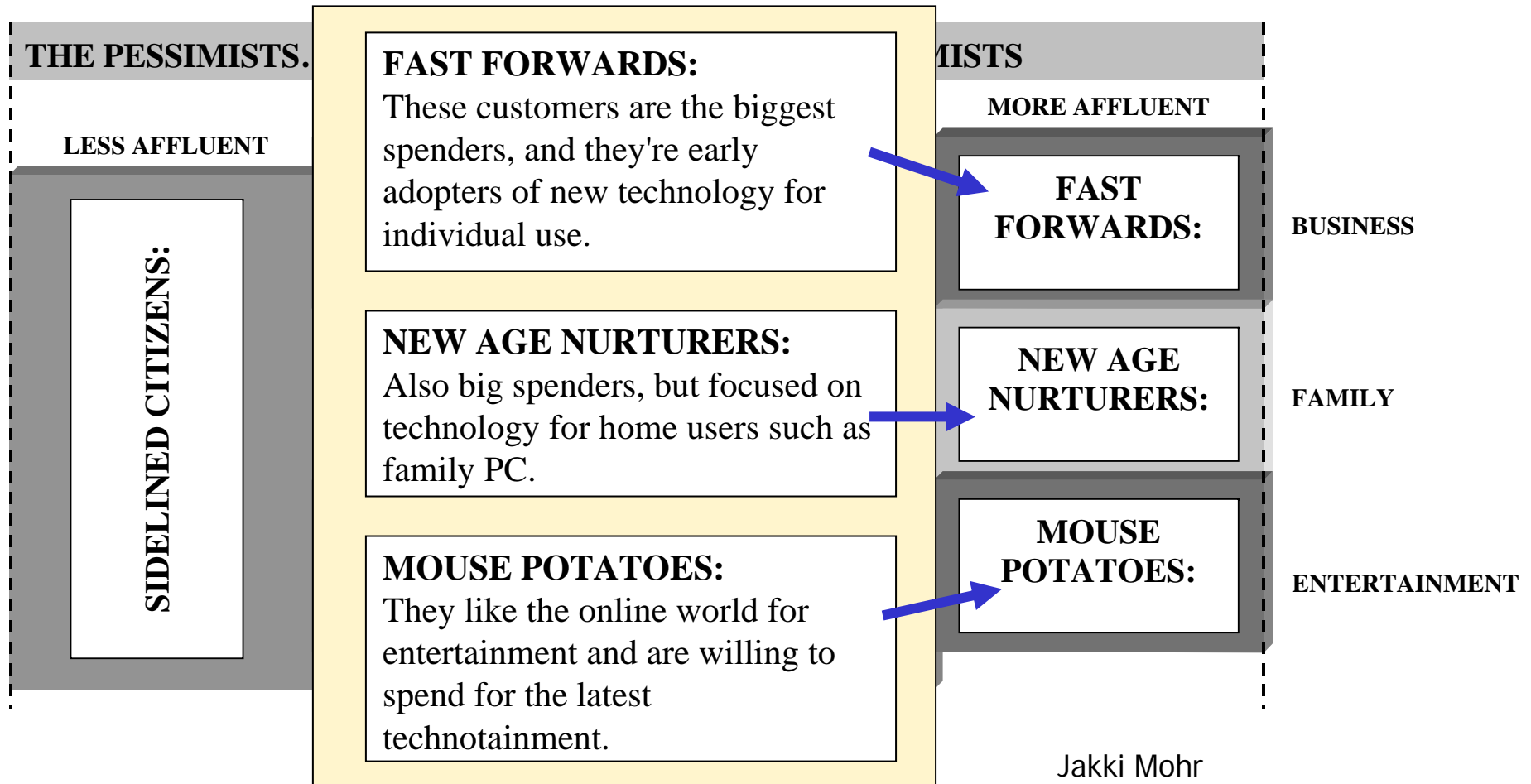
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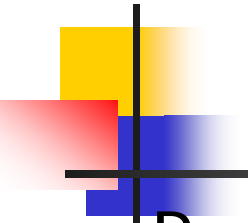




Steps in Market Segmentation

- 3. Evaluate and select a target market:
 - Size of segment in terms of sales volume
 - Growth rate of the segment
 - Competition within the segment
 - Ability of firm to effectively meet the needs of the segment

What makes a good “beachhead”?



- Provides “adjacencies” to other segments
 - Word of mouth
 - Similarities in whole product needs
- Customers have a single, compelling, “must-have” reason to buy.
 - Purchase of new technology radically improves productivity on an already well-understood critical success factor
- Firm must be able to dominate segment, with a whole product, capturable in short period of time



Compelling Customer Needs

- New technology provides dramatic improvement in customer firm's competitive advantage in its industry.
 - Difficult to quantify *a priori*
 - Therefore, unpalatable to pragmatists
- New technology improves firm's productivity
 - Easier to quantify
 - Compelling to a pragmatist—therefore best for crossing the chasm
- New technology verifiably reduces operating costs
 - May appeal to conservative, BUT:
 - May be risky and supporting infrastructure may not be sufficiently developed



Key in Selecting Target(s)

- Must not spread resources too thinly across multiple segments



Step 4 of Segmentation Process

- 4. Position the product within the segment
 - Consider customer perceptions
 - Position relative to perceived competition
 - Position on important, compelling attributes/benefits



Customer Strategies to Avoid Obsolescence

- Basic Issue: Tension between adopting newest generations of technology and obsoleting investments in prior generations.
- Marketing implication: Firms must manage a migration path for customers to the new generation.



What Affects Customer's Migration Decision?

- Expectations about *pace* of improvements relative to price
- Expectation about *magnitude* of improvements relative to price

** The greater the anticipated product improvements and/or expected price declines, the greater the customer's propensity to delay purchase.

**



Implication:

- High-tech firms must provide upgrades that allow firms to take advantage of new technology without scrapping investments in the prior generation.
- A “migration path” is a series of upgrades to help transition the customer to new generations.



Managing a Migration Path

Withdraw older generation immediately

No migration assistance

Offer migration assistance

Sell old & new generations

Sell simultaneously for brief periods

Indefinitely



CUSTOMER OPTIONS:

Constrained

Enlarged



Managing A Migration Path

- When customers expect a *rapid pace* in technology advancement:
 - They will be willing to wait for price declines
 - Migration assistance (i.e., trade-ins, etc.) mitigates against customer stalling and leapfrogging.



Managing A Migration Path

- When customers expect significant magnitude of improvement
 - They realize smooth upgrading is unlikely
 - Waiting for price declines may result in purchasing an obsolete product
 - Therefore, migration path is less crucial, as it is meaningless, to a certain extent



Managing A Migration Path

- When customers have uncertainty about expectations:
 - Migration path makes sense
 - Sell old and new simultaneously