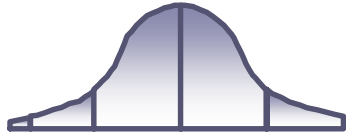




Biometrics Market Development From Fad to Fortune



Leveraging the Technology Adoption Lifecycle

based on the work of Geoffrey A. Moore

in his books *Crossing the Chasm* and *Inside the Tornado*

CardTech SecureTech
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From Fad to Fortune

Leveraging the Technology Adoption Lifecycle

The TAL Model

- The Chasm 
- The Bowling Alley 
- The Tornado 

Implications for Biometrics

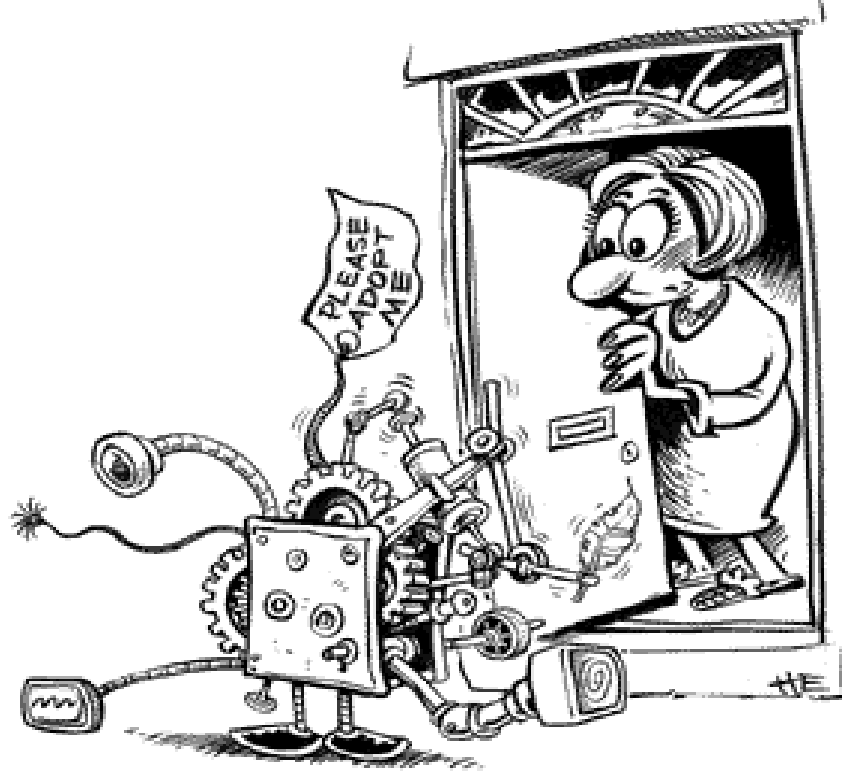
Exploit Opportunities

The Winners

Implications for Stakeholders

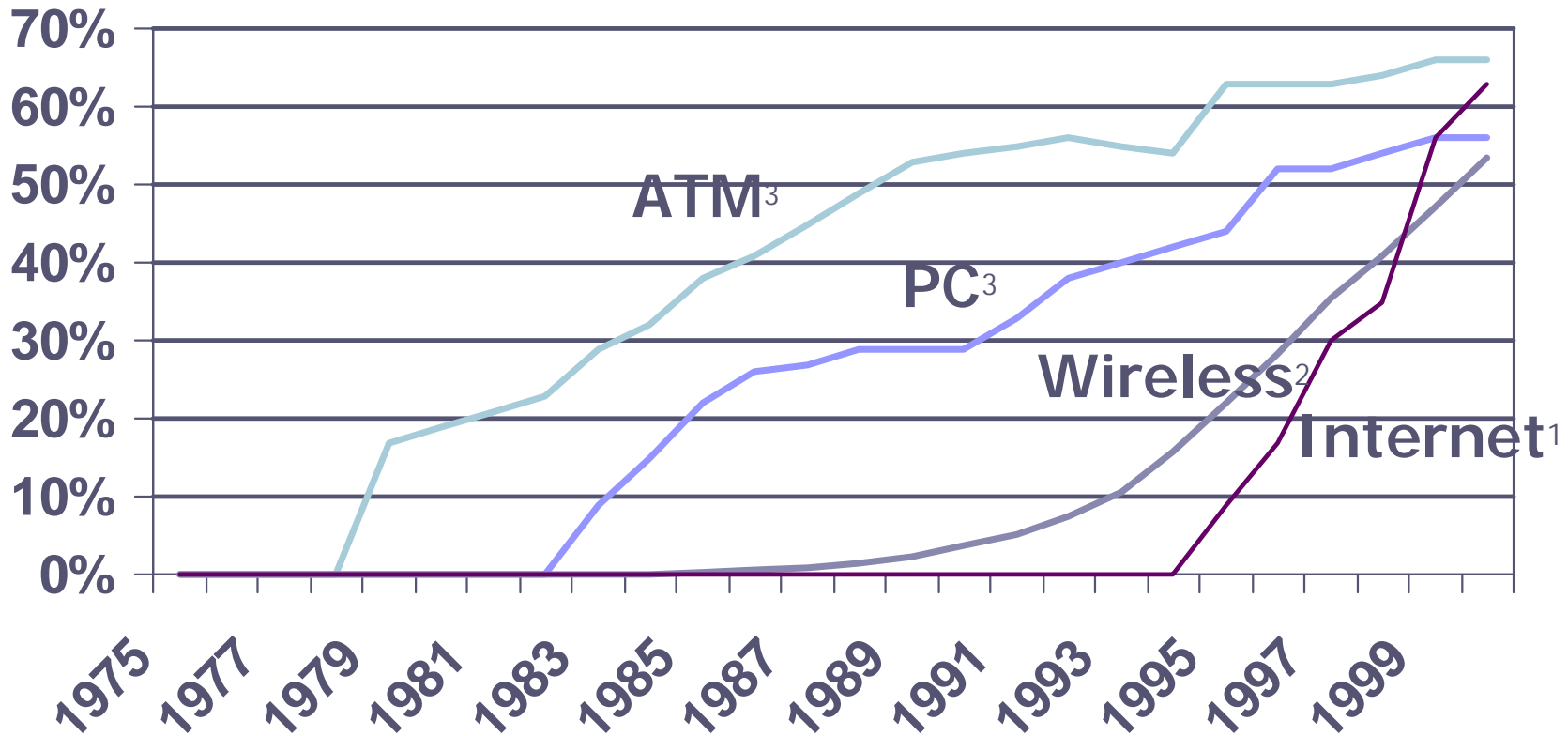
- When will the Market Take-Off?
- Why Should You Care?

Technology Adoption



TECHNOLOGY ADOPTION LIFE CYCLE

Historical Adoption Rates*

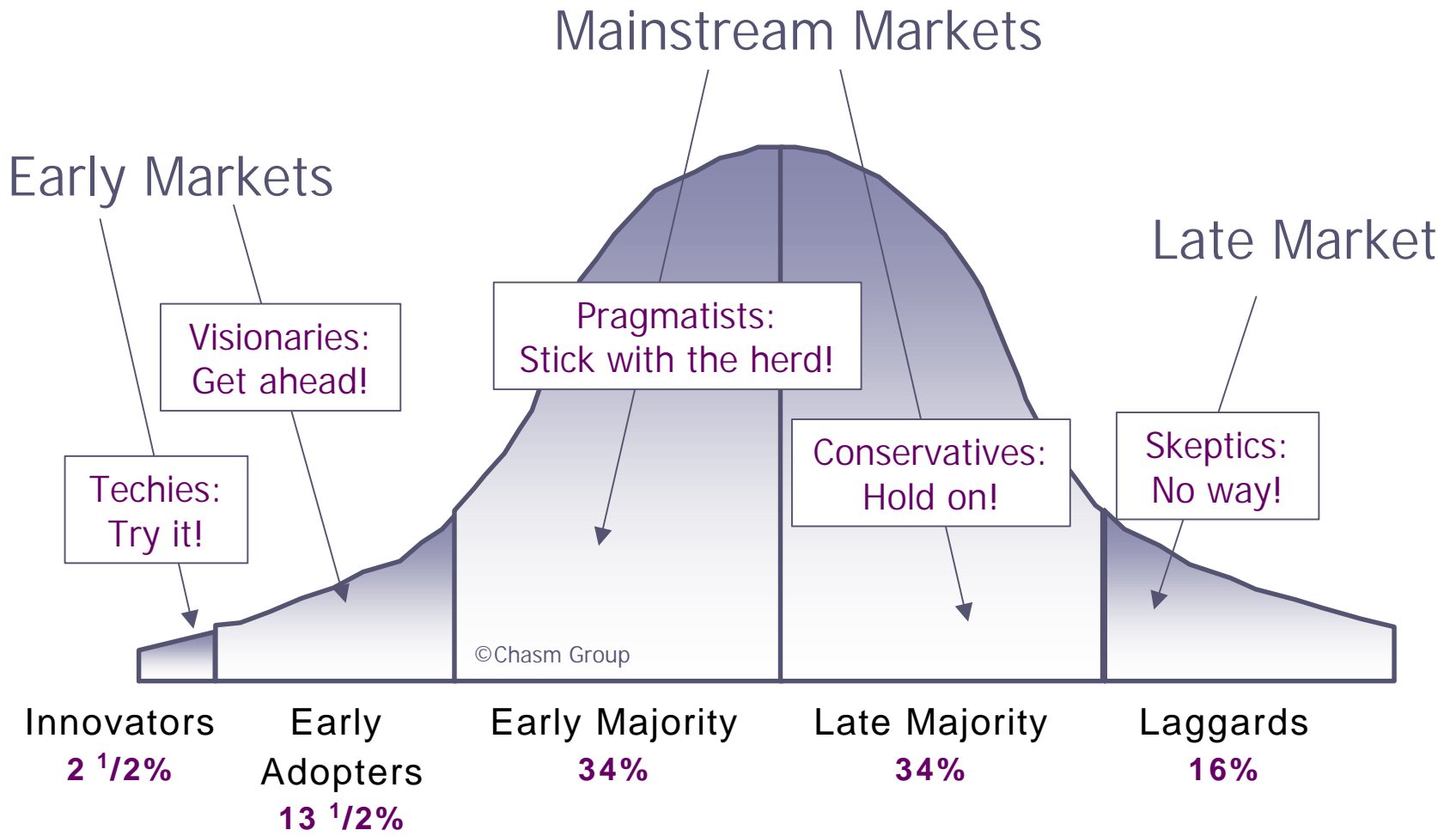


*US data

1 US Adults online - Harris Interactive, 11/01 2 % Penetration - Frost & Sullivan 9/99 3 penetration of US households - 15K+ income Synergistics 10/0

Technology Adoption Life Cycle

Groups are distinguished from each other based on their characteristic response to discontinuous innovations created by new technology



Early Market Success

- 1) a breakthrough technology product that enables a new and compelling application,
- 2) a technology enthusiast who can evaluate and appreciate the superiority of the product over current alternatives and
- 3) a well-healed visionary who can foresee an order-of-magnitude improvement from implementing the new applications

- Geoffrey Moore



Market Development Model

Transitions are Not Smooth

Main Street



Tornado



The Chasm



Early Markets



Techies

Visionaries

Bowling Alley



Pragmatists

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Conservatives

Total Assimilation



Skeptics



Why The Chasm is Created?

Basis for Sale Radically Different



Visionaries: break from pack

- Revolution
- Think Project, Not Product
- Buying Change Agent
- Driven by Competitive Edge
- Expect Radical Discontinuity
- Helps Pay for New Paradigm
- Prepared to Champion This Cause Against Entrenched Resistance
- Demand *Whatever It Takes* Commitment
- Rely on Their Own Judgement

Pragmatists: stay with herd



- Evolution
- Enhance Not Overthrow
- Buying Productivity Improvement for Existing Operations
- Whole Product Solution
- Does Not Want to Debug Product
- Works Properly and Integrates Easily With Existing Infrastructure
- On-going Relationship
- Buy From Market Leader
- Must Have References

Crossing the Chasm

- ☞ Niche Marketing - Divide and Conquer
 - Segment, Target, Dominate
- ☞ Shift from Technology/Product to Market/Solution
- ☞ RESIST Counterintuitive fall back to Sales Focus
- ☞ Size & Rank - *Pick on Someone Your Own Size*
- ☞ Solve Niche Market Problem
 - Unique to Segment
 - Difficult to Solve
 - Significant Economic Impact
- ☞ Develop Whole Product
- ☞ It's About Relationships (not Markets)
- ☞ GOAL: Secure Mainstream Beachhead

Aside: Market Definition

Marketing: Taking actions to create, grow, maintain or defend markets.



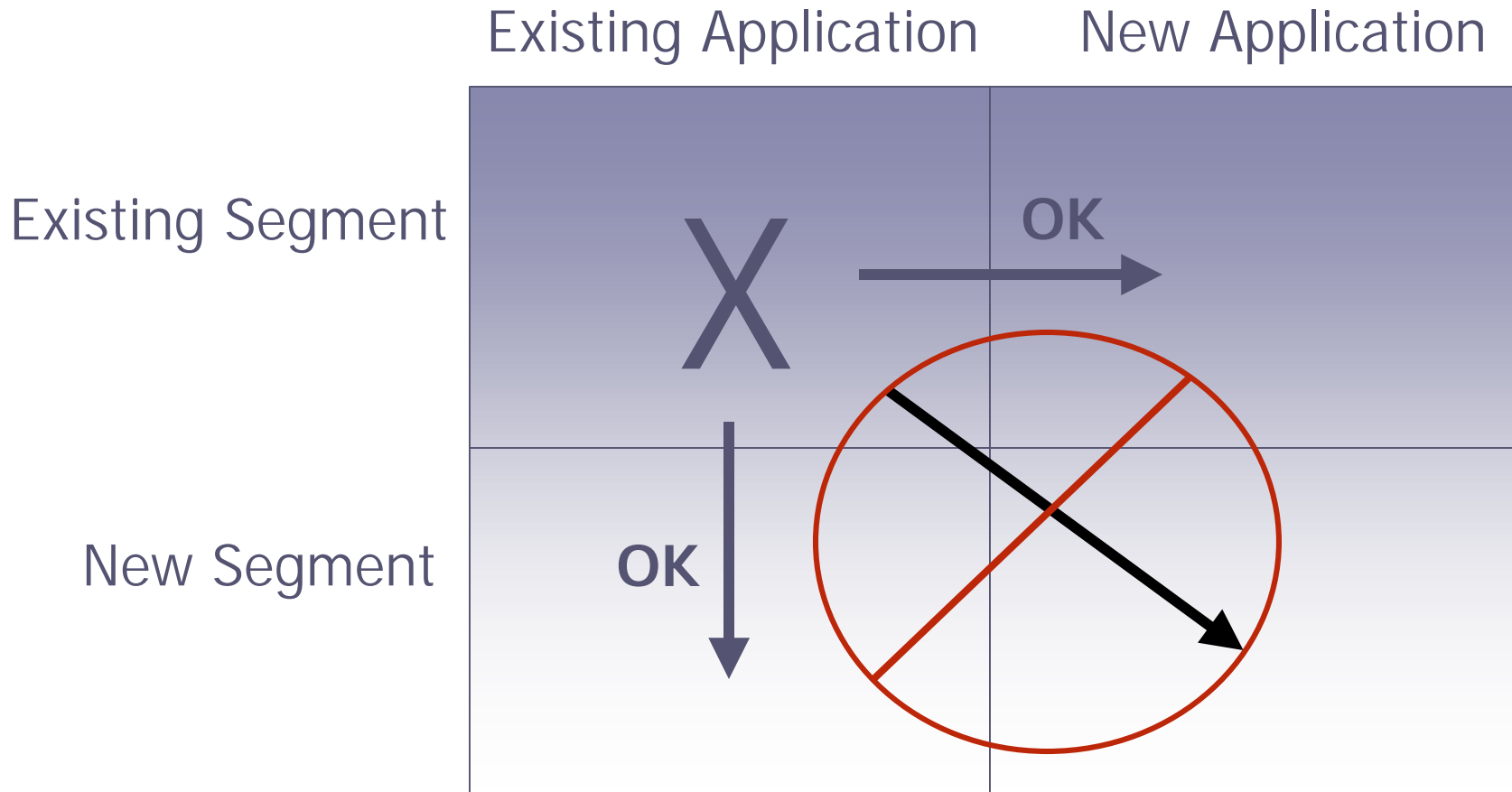
Market:

- a set of actual or potential customers
- for a given set of products or services
- who have a common set of needs or wants, and
- who reference each other when making buying decisions

1) Market Self Select

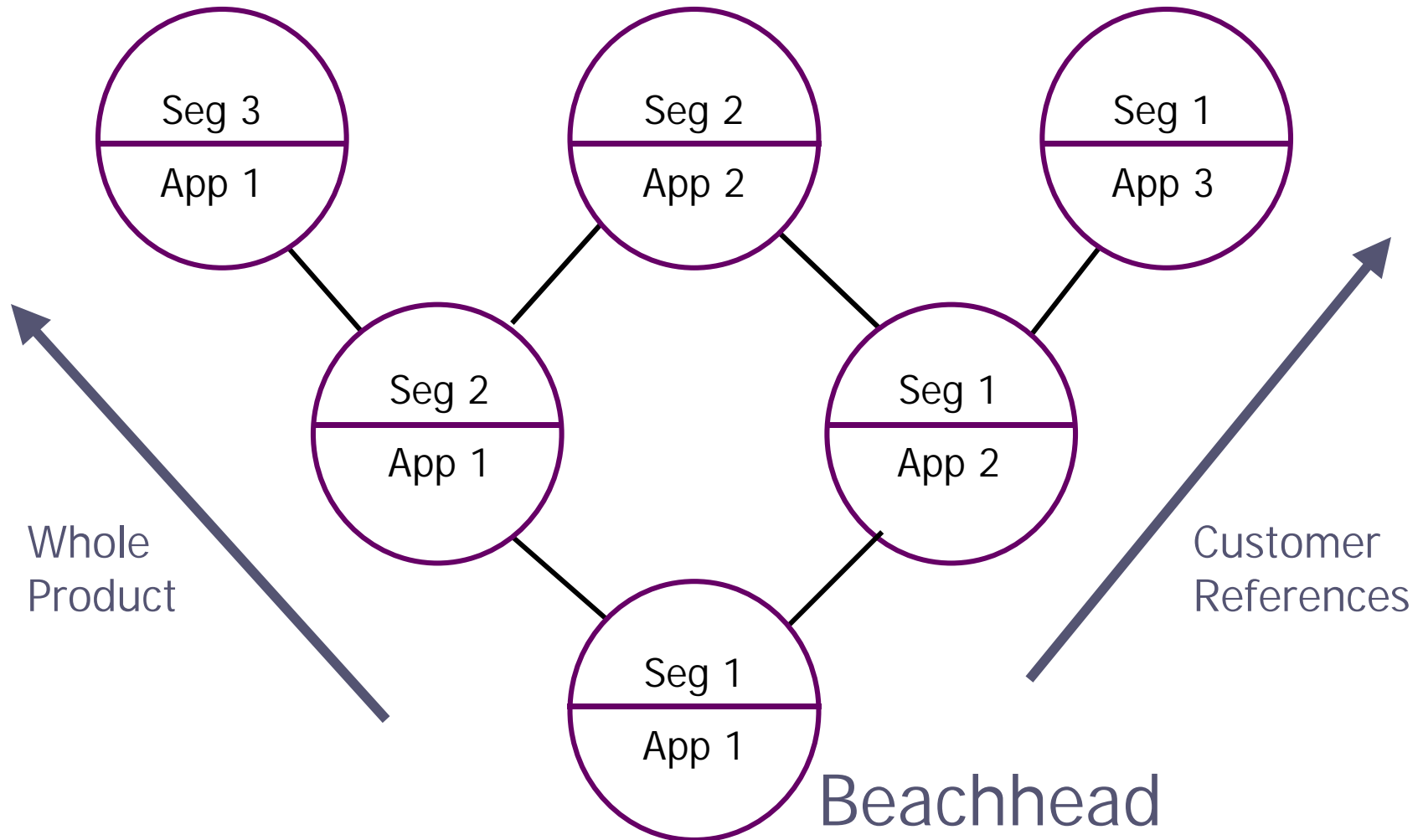
2) Two individuals/organizations buying the same product for the same reason that have no way to reference each other are not part of the same market.

Aside: Niche Market Penetration



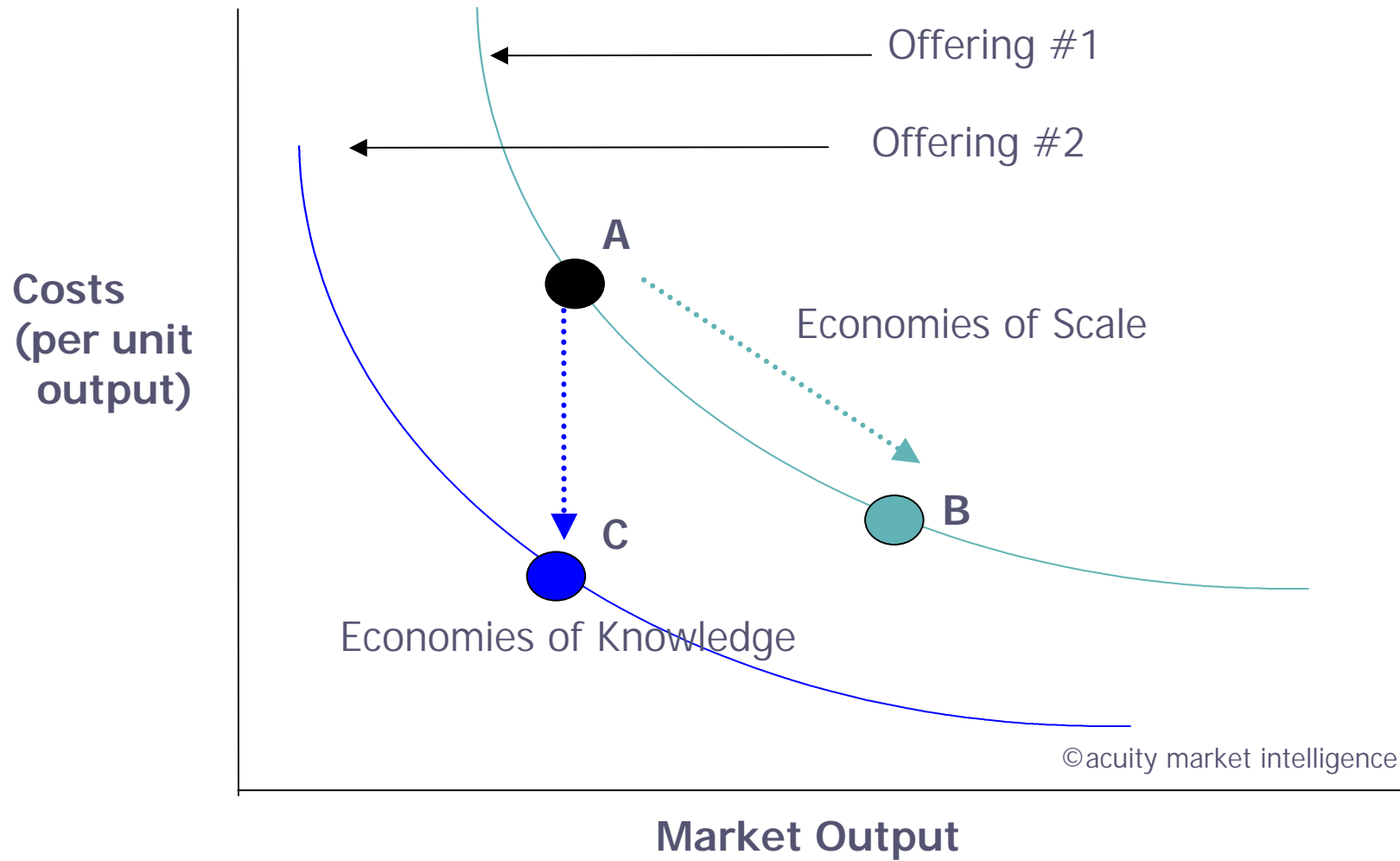


Bowling Alley Strategy



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Economies of Knowledge[©]





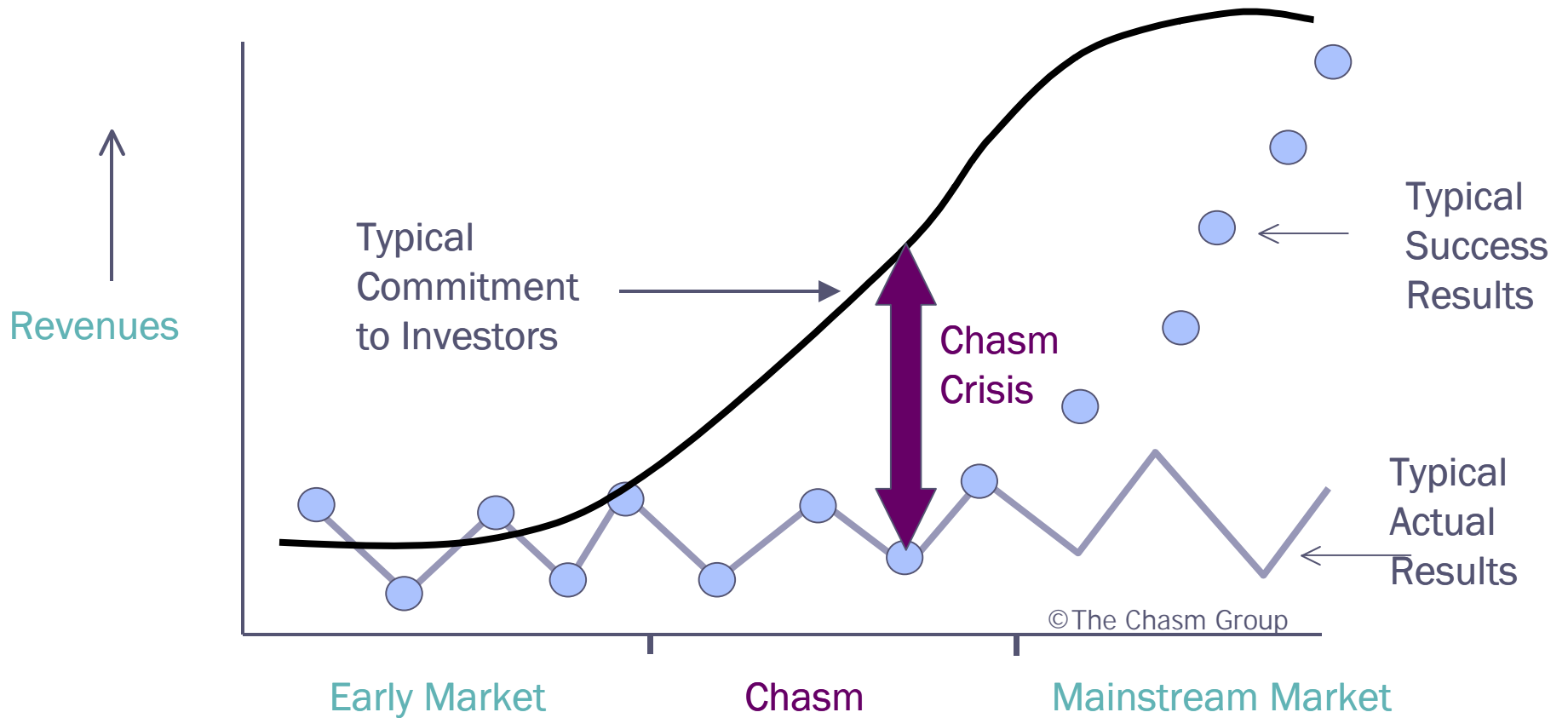
The Tornado

- ☞ Period of Hyper Growth
- ☞ Technology Solution Proven in Several Niches
- ☞ Enough “Pins” Knocked Down to Attract Mainstream
- ☞ Pragmatic Buyers Flock *En Masse* to Adopt Technology Standard
- ☞ Market Share Determined - Leadership Established
- ☞ Product Focus *Shifts From Problems of the End User to Infrastructure Buyer* That Implements Technology
- ☞ Set Technology Standard – Reap Financial Rewards
- ☞ Forget the Customer - "Just Ship It"
- ☞ GOAL: Establish Market Share – *Be the Gorilla!*

Biometrics Today

- ☞ Don't Be Fooled by Post 911 Market Hype
- ☞ Based on Product Category - Not Just Your Product
- ☞ ***Biometrics Market*** Is a Misnomer - Product Category Versus Market Category
- ☞ Stay in Early Market until Core Technology Fully Developed
- ☞ Adopt Appropriate Marketing Strategy!
 - Early Market – Finance Your Core Technology With Specials
 - Chasm - Choose a Beachhead Equal Your Annual Revenue
 - Bowling Alley – Leverage Niche Market Whole Product

🖐️ Biometrics Today: Chasm Crisis



Exploit The Opportunity

- ☞ Goal is not to develop “best possible solution” but rather to develop “best solution possible”
- ☞ Develop Vertical Market - Horizontal Application Matrix
- ☞ Size and Rank Opportunities & *Pick on Someone Your Own Size*
- ☞ Refocus from selling products toward creating relationships
- ☞ Pragmatists will rally behind you and conspire to keep your competitors out
- ☞ LEVERAGE Word of Mouth
- ☞ As niche markets penetrated, solution perceived to be less of a niche product, momentum builds towards the Tornado.

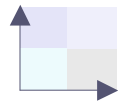
Market Development Process

Vertical Industry Approach: Identify Problems that are Unique, Difficult, Significant then *Divide and Conquer* - Segment, Target, Dominate



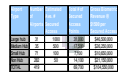
Market Segmentation

- Identify
- Granulate



Opportunities

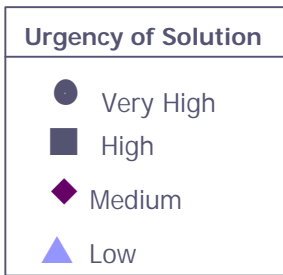
- Prioritize
- Rank



Size

- Define The Universe
- Top Down

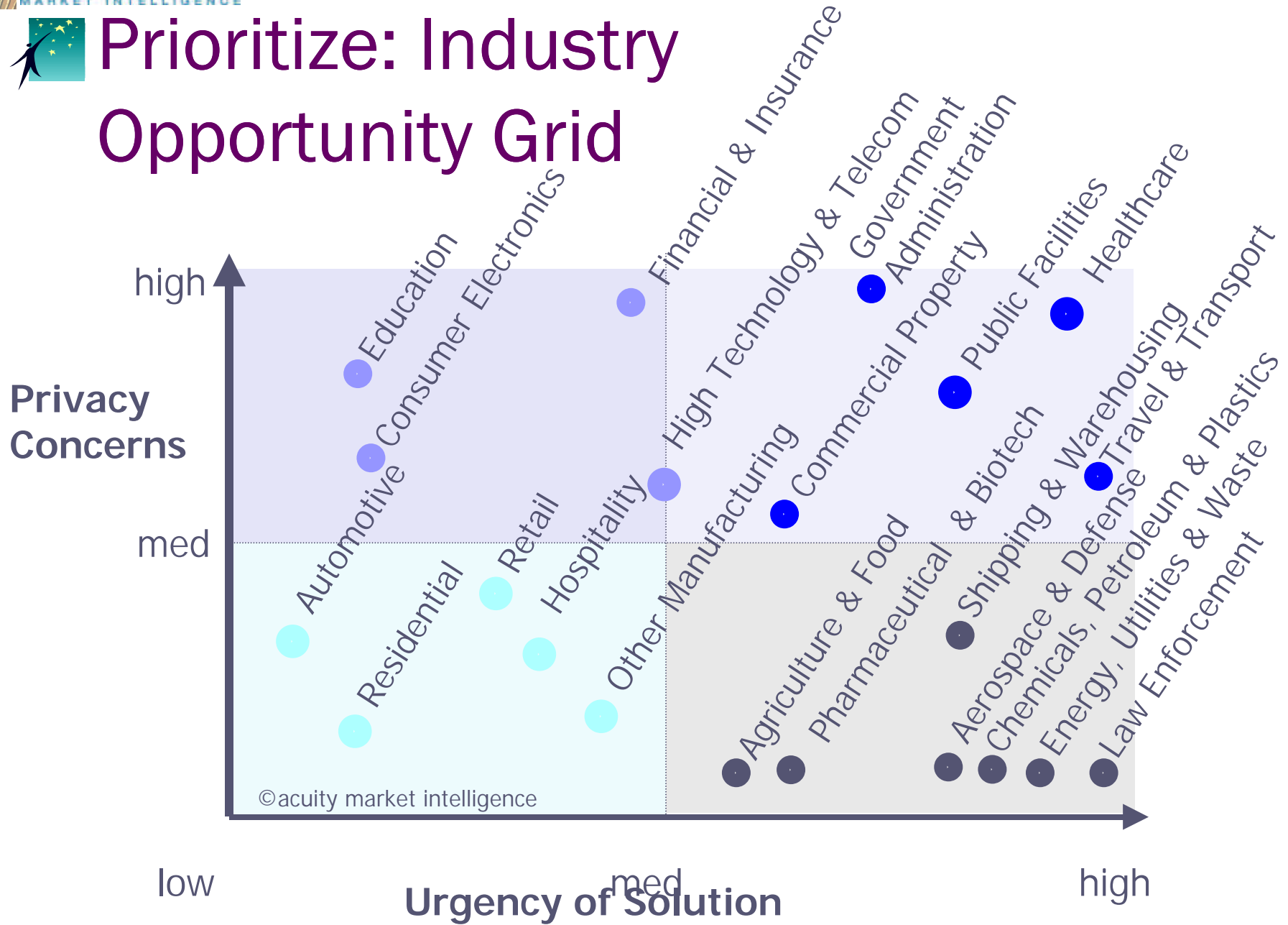
Identify: Biometrics Industry Segmentation Matrix



	Government Administration	Law Enforcement	Aerospace & Defense	Financial & Insurance	Healthcare	Hospitality	Public Facilities	Travel & Transportation	Shipping & Warehousing	Energy, Utilities & Waste	Chemicals, Pharmaceutical & Biotech	Agriculture & Food	Education	High Technology & Telecom	Other Manufacturing	Commercial Property	Retail	Automotive	Consumer Electronics	Residential	
Physical Access	●	●	●	●	■	■	●	●	●	●	●	●	■	■	■	■	◆	▲	▲	▲	
Logical Access																					
Secure Data personal, corporate, public	●	●	●	●	●	■	■	●	●	●	●	●	■	●	■	■	◆	◆	◆	◆	
Financial Transactions POS, ATM, e-commerce, gov't disbursements	■	◆	◆	■	●	◆	◆	■	■	■	●	■	■	◆	◆	■	●	■	▲	■	◆
Identity Confirmation																					
Voter, Benefits, DMV, Drivers License background check	●	●	●	■	■	■	■	●	■	■	■	■	■	◆	◆	◆	■	▲	▲	▲	-
Time & Attendance																					
	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	▲	◆	◆	▲	◆	▲	▲	-	
Surveillance																					
public & private	●	●	■	■	■	◆	●	●	■	●	●	●	■	◆	◆	■	■	▲	▲	▲	

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Prioritize: Industry Opportunity Grid



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Granulate: Travel & Transportation Segments

Urgency of Solution	
●	Very High
●	High
●	Medium
●	Low

	Air	Rail	Ship	Truck	Bus	Auto	Travel Services
Physical Access employee, crew, suppliers	●	●	●	●	●	●	●
Logical Access Secure Data personal, corporate, public	●	●	●	●	●	●	●
Financial Transactions purchase tickets	●	●	●	●	●	●	●
Identity Confirmation passport, trusted traveler	●	●	●	●	●	●	●
Time & Attendance	●	●	●	●	●	●	●
Surveillance public, private	●	●	●	●	●	●	●

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Granulate: Air Travel & Transportation Segments

Urgency of Solution	
●	Very High
●	High
●	Medium
●	Low

	Airport Perimeter	Airport Public Access	Airport Private Access	Airplanes	Passengers	Airport Employees	Crew	Outside Suppliers	Baggage	Cargo & Mail	Airline Employees	Travel Services
Physical Access employee, crew, suppliers	●	●	●		●	●	●	●	●	●	●	-
Logical Access Secure Data personal, corporate, public	-	-	-	●	●	●	●	-	-	●	●	
Financial Transactions reservations, ticketing	-	-	-	●	-	-	●	-	●	●	●	
Identity Confirmation passport, trusted traveler	-	-	-	●	●	●	●	-	-	●	●	
Time & Attendance	-	-	-	-	●	-	-	-	-	●	●	
Surveillance public, private	●	●	●	●	●	●	●	●	●	●	●	●

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Size: Target Segment Sizing

Airport Secure Access Example U.S. DOT Data

Airport Type	Number of Airports	Estimated Ave. # Secured Access	Total # of Secured Access Points	Gross Biometric Revenue @ \$1500 per Secured Access
Large hub	31	1000	31,000	\$46,500,000
Medium Hub	35	500	17,500	\$26,250,000
Small Hub	71	100	7,100	\$10,650,000
Non Hub	282	50	14,100	\$21,150,000
TOTAL	419		69,700	\$104,550,000

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The Winners

- ☞ Divide and Conquer - Segment, Target, Dominate
- ☞ Define the Whole Product
- ☞ Build an Organization that leverages Relationships
- ☞ Shift from Technology/Product to Market/Solution Focus
- ☞ Its Counterintuitive BUT RESIST Fall back to Sales Focus
- ☞ Compensate Sales Force to Pursue Niche Opportunities
- ☞ Pass the Elevator Test
 - For (target customers – beachhead segment only)
 - Who are dissatisfied with (the current market alternative)
 - Our product is a (new product category)
 - That provided (key problem-solving capability)
 - Unlike (the product alternative)
 - We have assembled (key whole product features for your specific application)
- ☞ Be Ready to Rock & Roll when the Tornado hits

Implications for Stakeholders

So, When Will The Market Take-off 

- Chasm Crossing Complete
- Technology Proven in Wide Range of Applications
- Mainstream Adoption Across Multiple Industries
- Privacy & Security Issues Resolved
- Ready for Mass Consumer Market

① Implications for Stakeholders

Why Should You Care?

- Biometrics Vendors

- Solution Providers

Integrators, OEMs, VARs, ISVs

- Investors

- End-Users

Buy These Books



Crossing The Chasm

&

Inside The Tornado



by Geoffrey A. Moore



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