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ACUITY
MARKET INTELLIGENCE

presents

The Transformation of the Iris Recognition Market 2007 – 2020

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washington DC
iPira biometric series

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MARKET INTELLIGENCE

Acuity Market Intelligence is an emerging technology strategy and research consultancy with a proven record of accurately anticipating biometric and associated identification solutions market trends.

Markets	Identification Solutions, Biometrics, Authentication
Services	Market Analysis & Strategic Planning Opportunity Assessment & Analysis Technology Adoption & Deployment Evaluations
Clients	Vendors, Solution Providers, Integrators, Investors, End Users

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Context

How Will the Iris Recognition Market Evolve Through 2020?

"Over the next 10 years the infrastructure to enable mainstream, ubiquitous biometric authentication will be developed. Biometrics will be a critical embedded component of the digital world, as it becomes a key enabler of trusted transaction control – data access and flow - for both personal and commercial use. This secure transaction capability will ultimately define the genuine opportunity for revenue associated with deployment of biometric technologies. The technology itself will, in many respects, become inconsequential as the applications it delvers become essential components of 21st century life. "

"The Future of Biometrics", Acuity Market Intelligence, April 2007

Today's Discussion

Market Growth	Industry Forecasts
	Iris Recognition Forecasts
Market Evolution	Solutions Adoption
	Meta Driver Demand Curves
Iris Transformation Drivers	Mass Public Deployment
	Biometric Modality Evolution
Iris Market Snapshot	Today and 2020
Iris Evolution Market	Transformation Timeline
Keys to Iris Evolution	Transformation Components
Perspective	Driving the Future

Market Growth

Biometrics Industry Forecast

Biometric Industry Revenues ($m USD)
2007 - 2015

Year	Revenue
2007	1,450
2008	2,113
2009	3,006
2010	3,842
2011	5,581
2012	6,531
2013	7,562
2014	8,334
2015	9,259
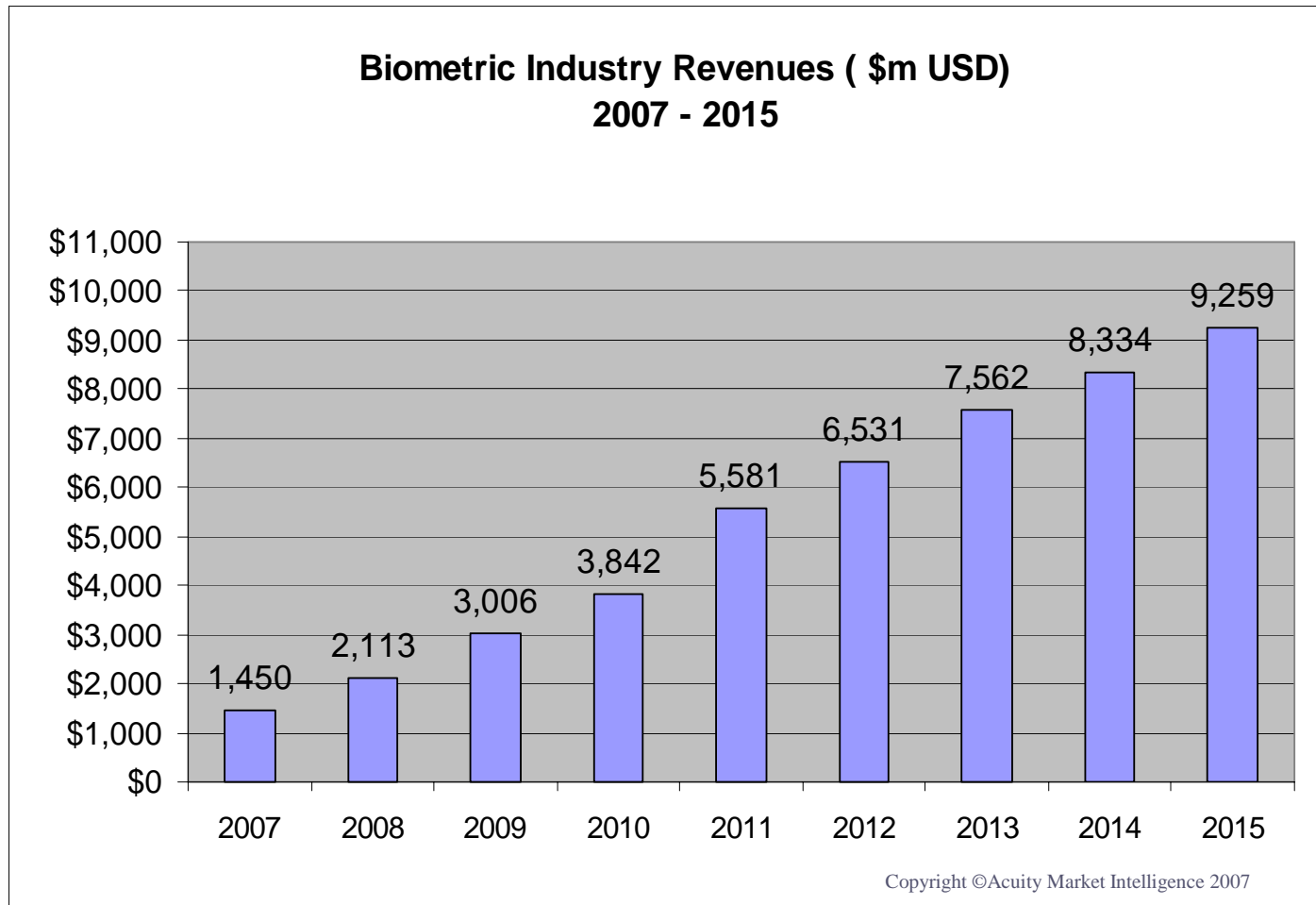
Market Growth

Comparative Adoption Rates

ATM[3]

PC[3]

Mobile

Internet[1]
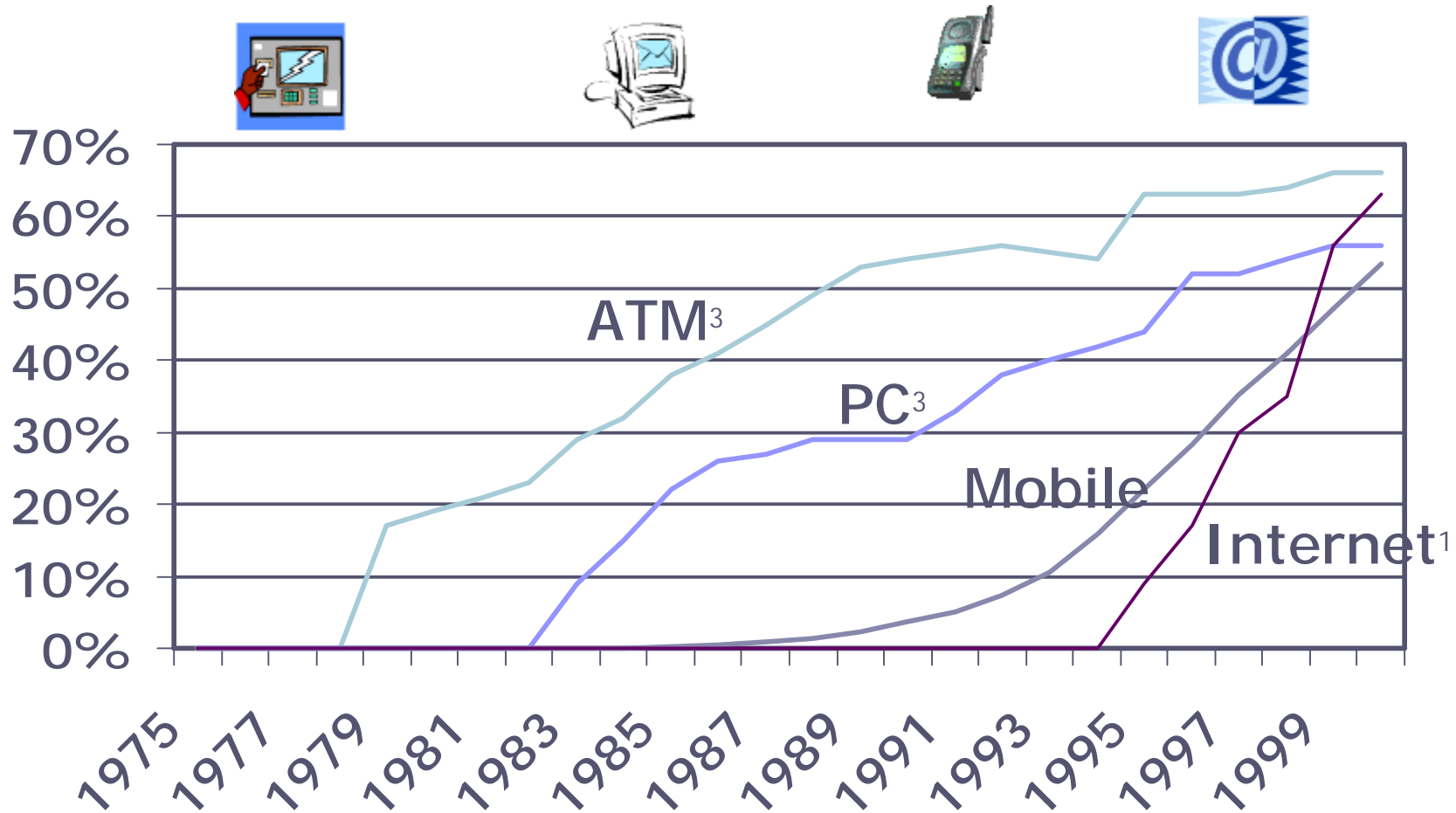
Market Growth

Biometrics Industry Forecast by Region

Worldwide Market Share 2007

Asia Pacific
17%

North America
38%

Central & South America
3%

Europe, Middle East & Africa
42%

Worldwide Market Share 2015

North America
26%

Asia Pacific
34%

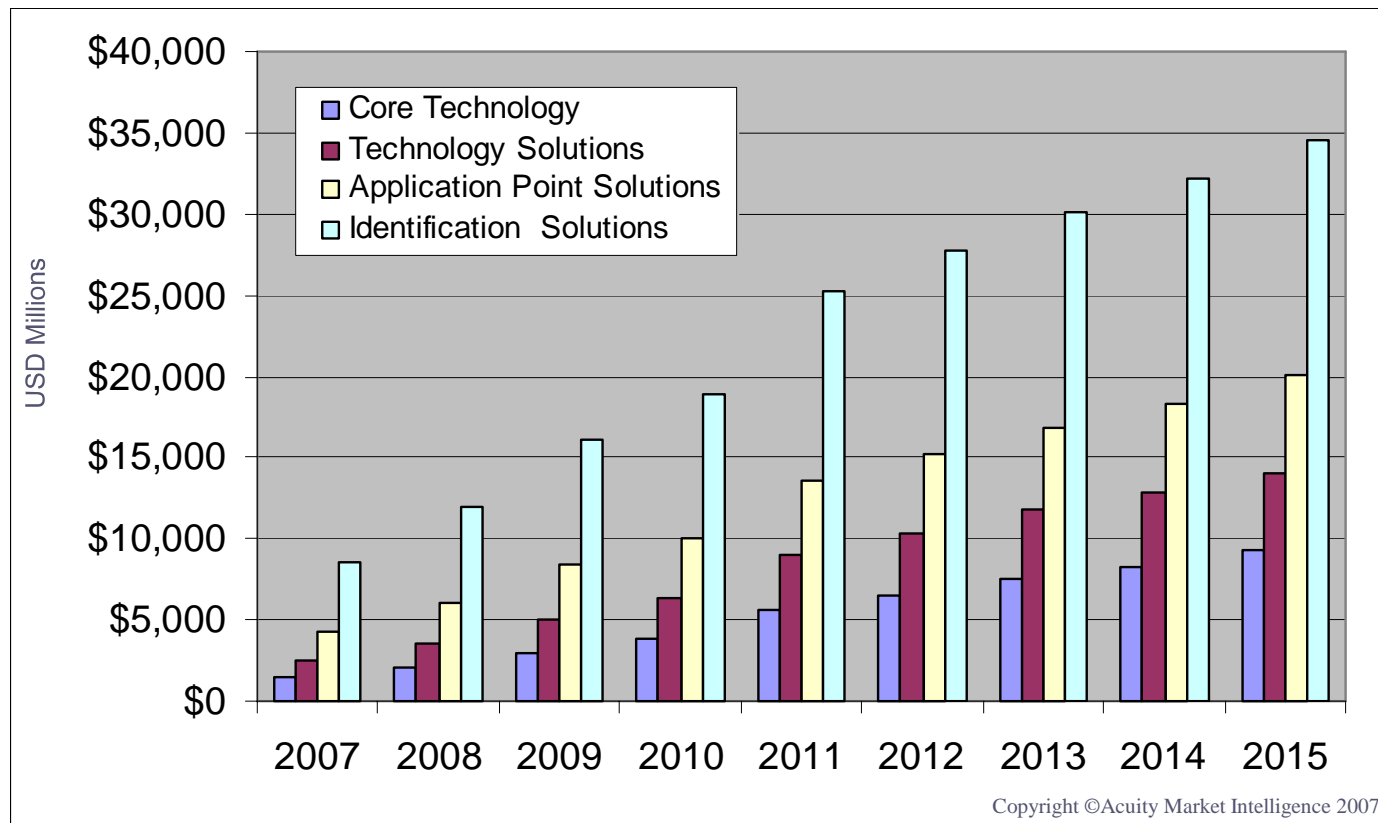Europe, Middle East & Africa
29%

Central & South America
11%
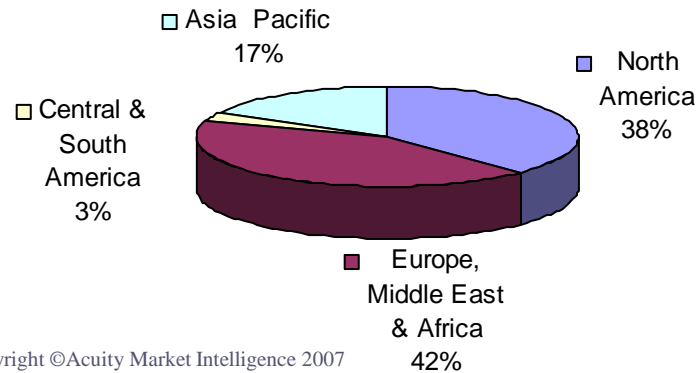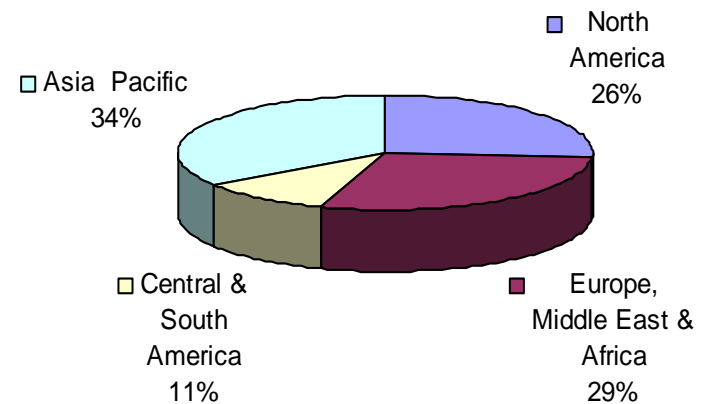
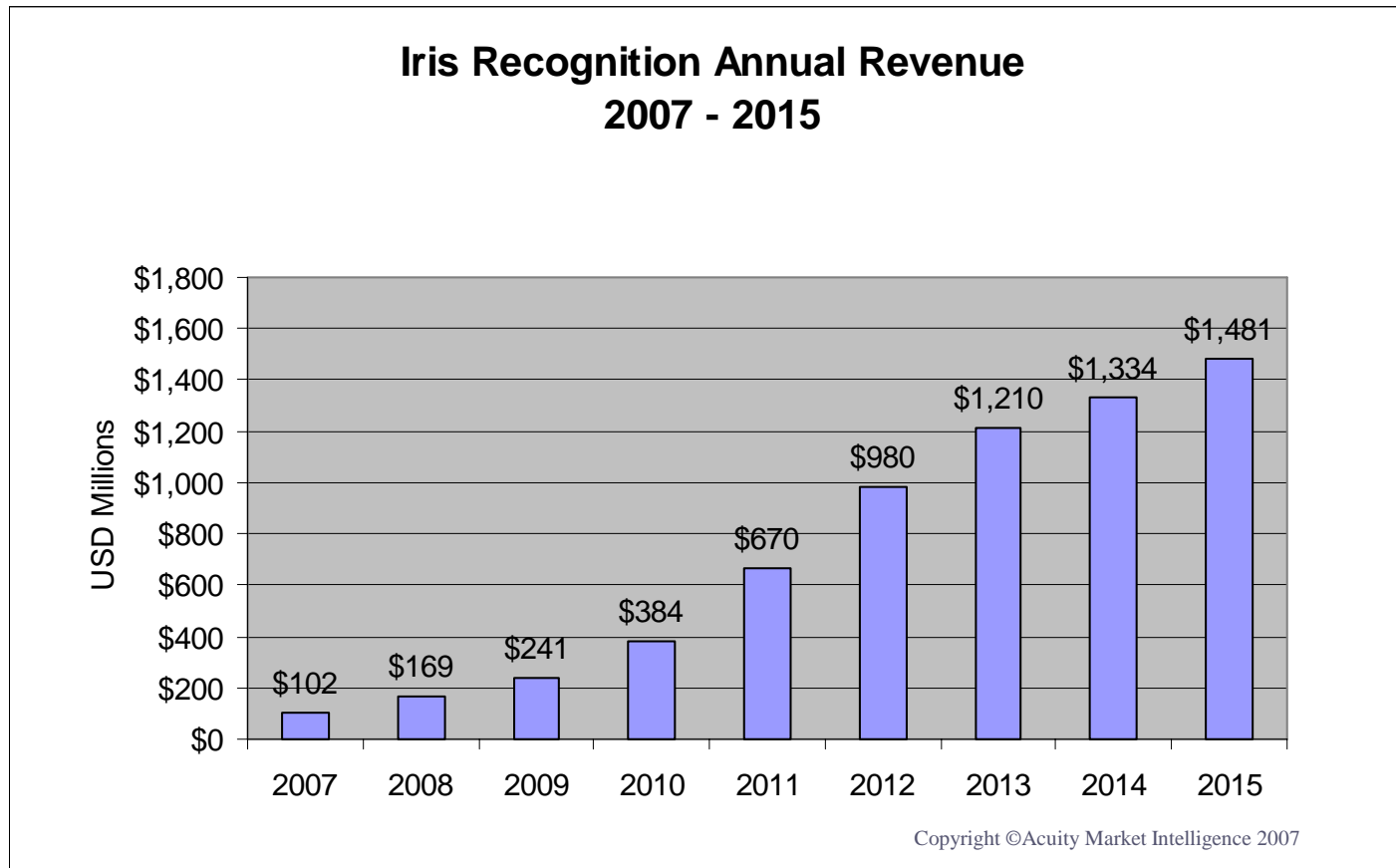# Market Growth

Biometrics Industry Value Chain Forecast

Value Chain Sizing

Core Technology represents a percentage of the overall revenues from biometrically enabled identification solutions.
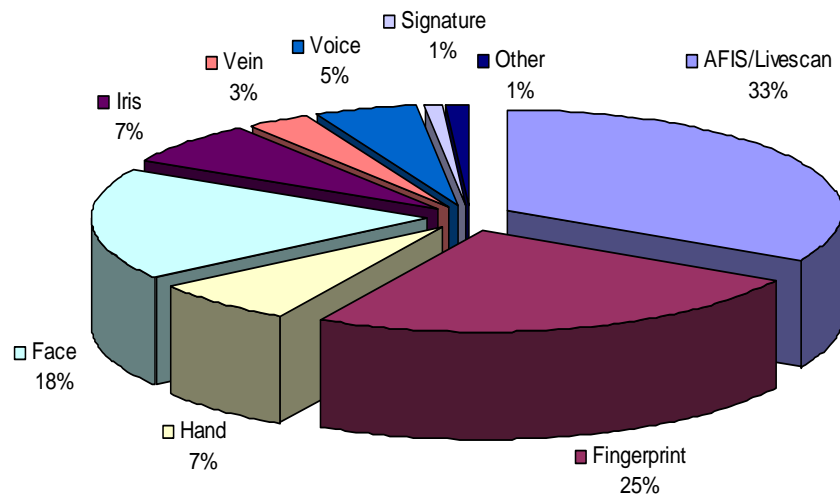

Legend:
- Core Technology
- Technology Solutions
- Application Point Solutions
- Identification Solutions

Y-axis: USD Millions ($0 to $40,000)
X-axis: 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

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Market Growth

Iris Recognition Forecast

Iris Recognition Annual Revenue
2007 - 2015

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Market Growth

Iris Recognition Forecast Share of Market

**Global Market by Technology
2007**

Signature 1%
Voice 5%
Vein 3%
Other 1%
AFIS/Livescan 33%
Iris 7%
Face 18%
Hand 7%
Fingerprint 25%

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**Global Market by Technology
2015**

Signature 10%
Other 4%
AFIS/Livescan 16%
Voice 13%
Fingerprint 15%
Vein 10%
Hand 1%
Iris 16%
Face 15%
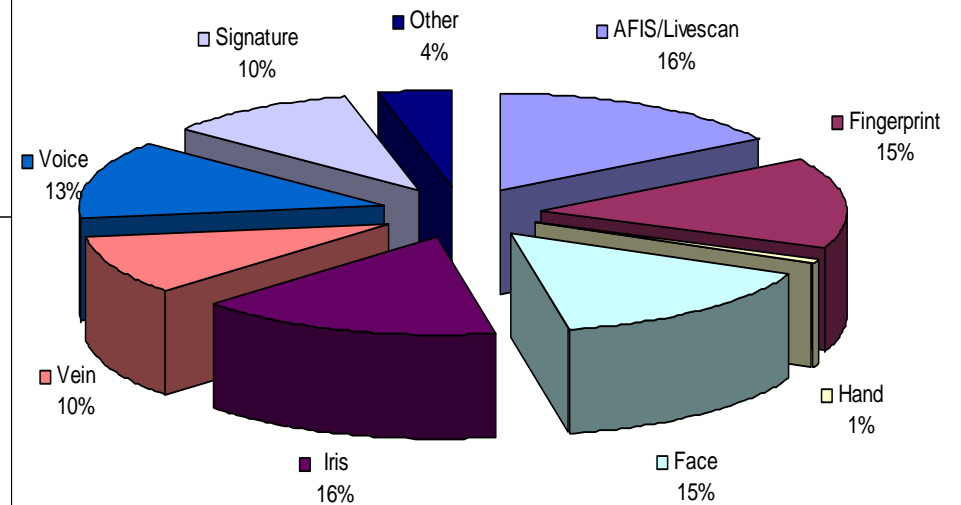
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Market Growth

Iris Recognition Solutions Forecast

Iris Recognition Solutions Revenue
2007 - 2015

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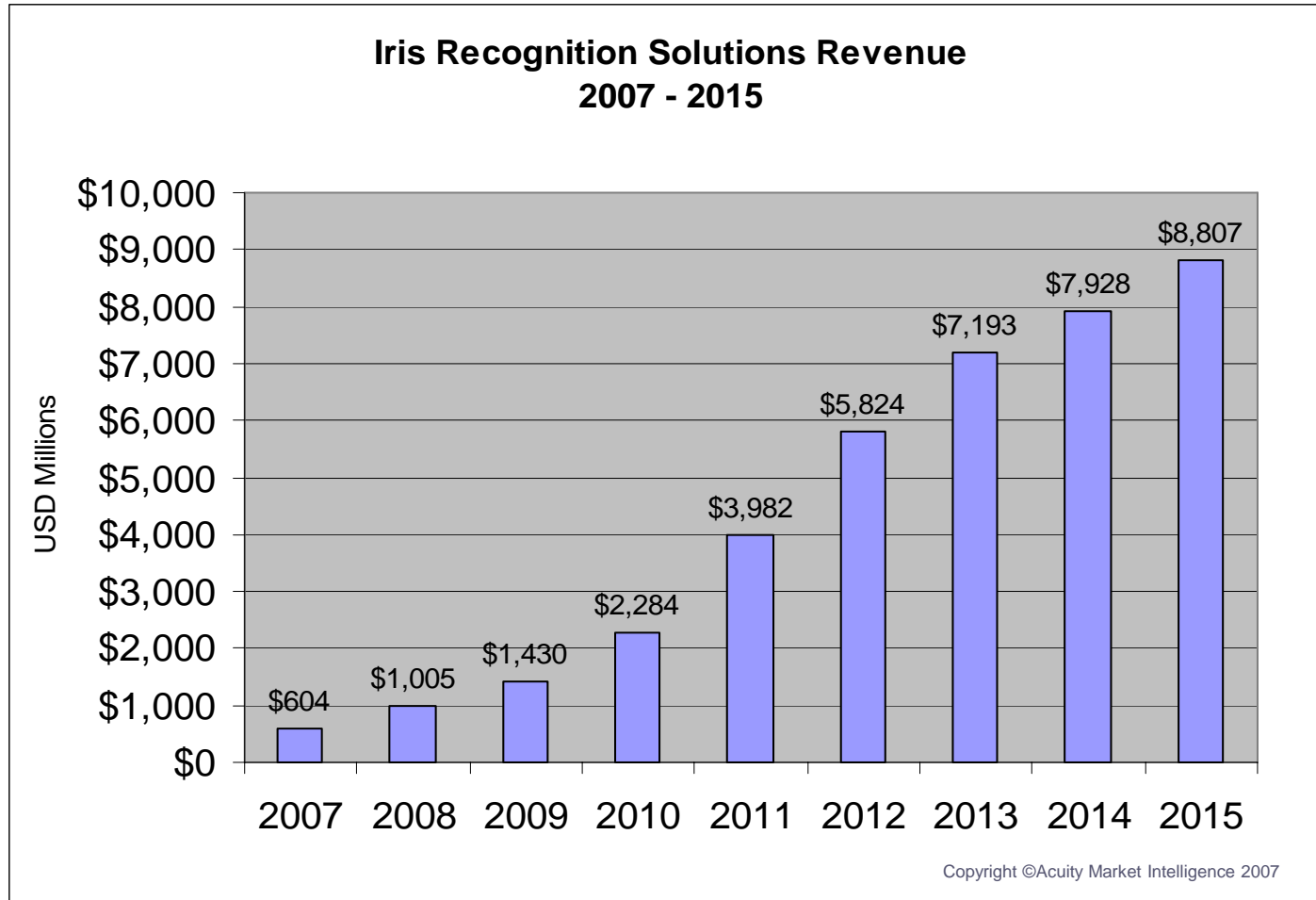
Market Evolution
Solutions Adoption

Technology vs. Solution Life Cycles

Main Street

Solution

Today

Late Market

Early Markets

Early Markets

Chasm

Main Street

Late Market

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Technology
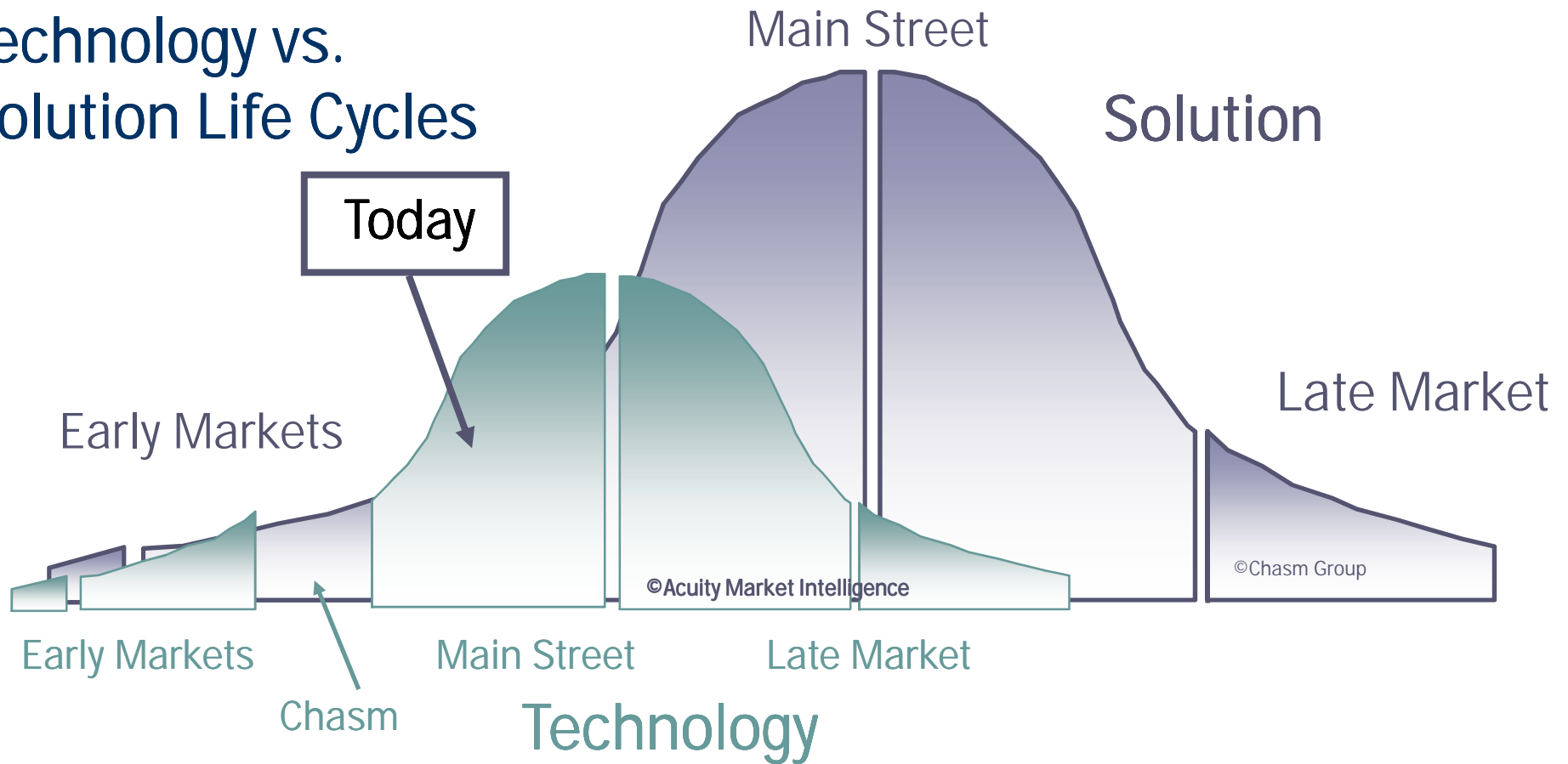
Market Evolution

Meta Driver Demand Curves

Public Sector Market Evolution

Integrated eBorders ▬ **eID** ▬ **eGovernment** ▪▪▪
passports, visas, border control | National IDs, ID Cards | ID verification, electronic access

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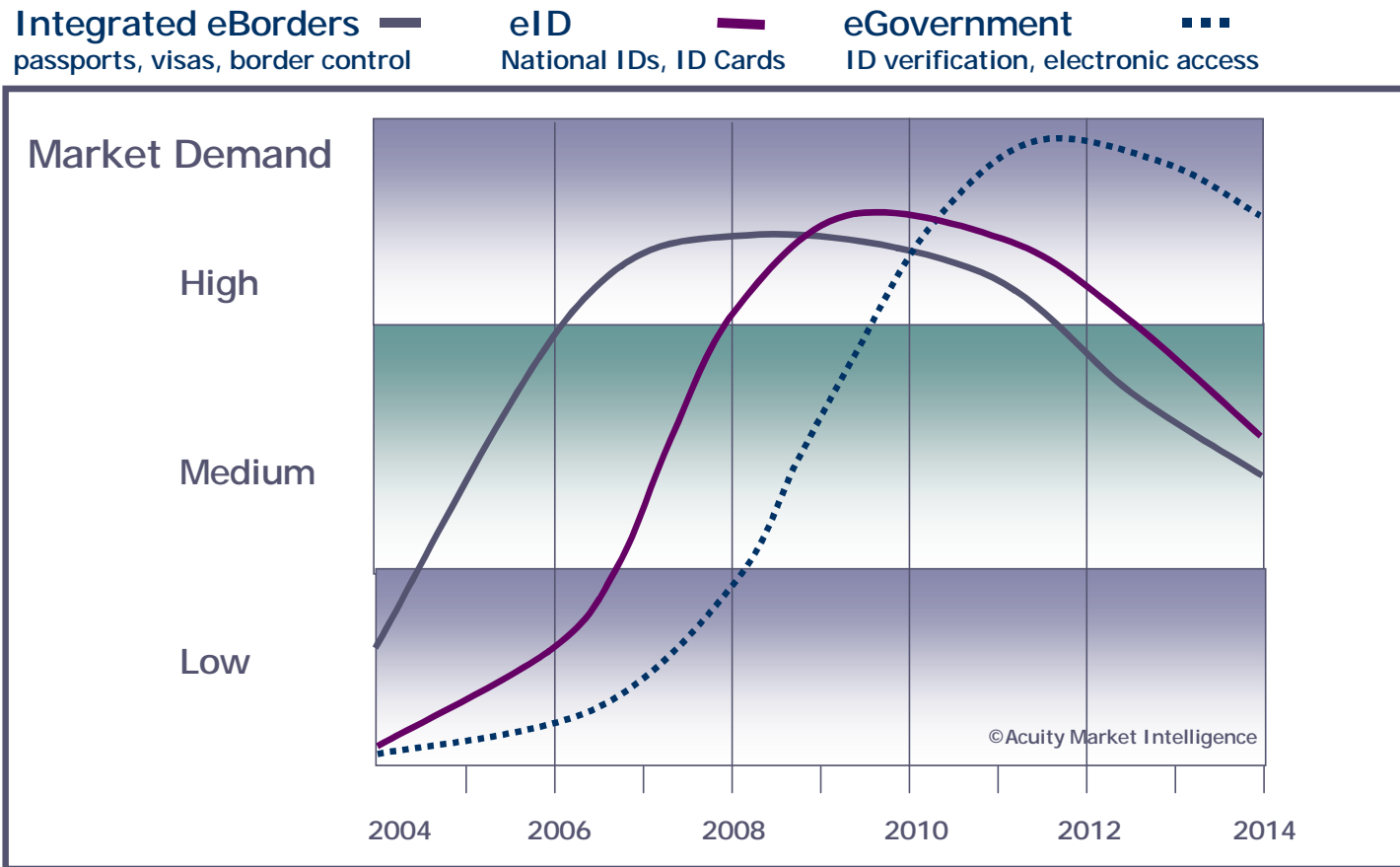
Market Evolution

Meta Driver Demand Curves

Commercial Market Evolution

Enterprise Security
physical & logical access ▬

Information Transactions
IP, accounts, private data ▬▬

Financial Transactions
POS, electronic payments ▪▪▪▪

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Market Demand

High

Medium

Low

2004   2006   2008   2010   2012   2014

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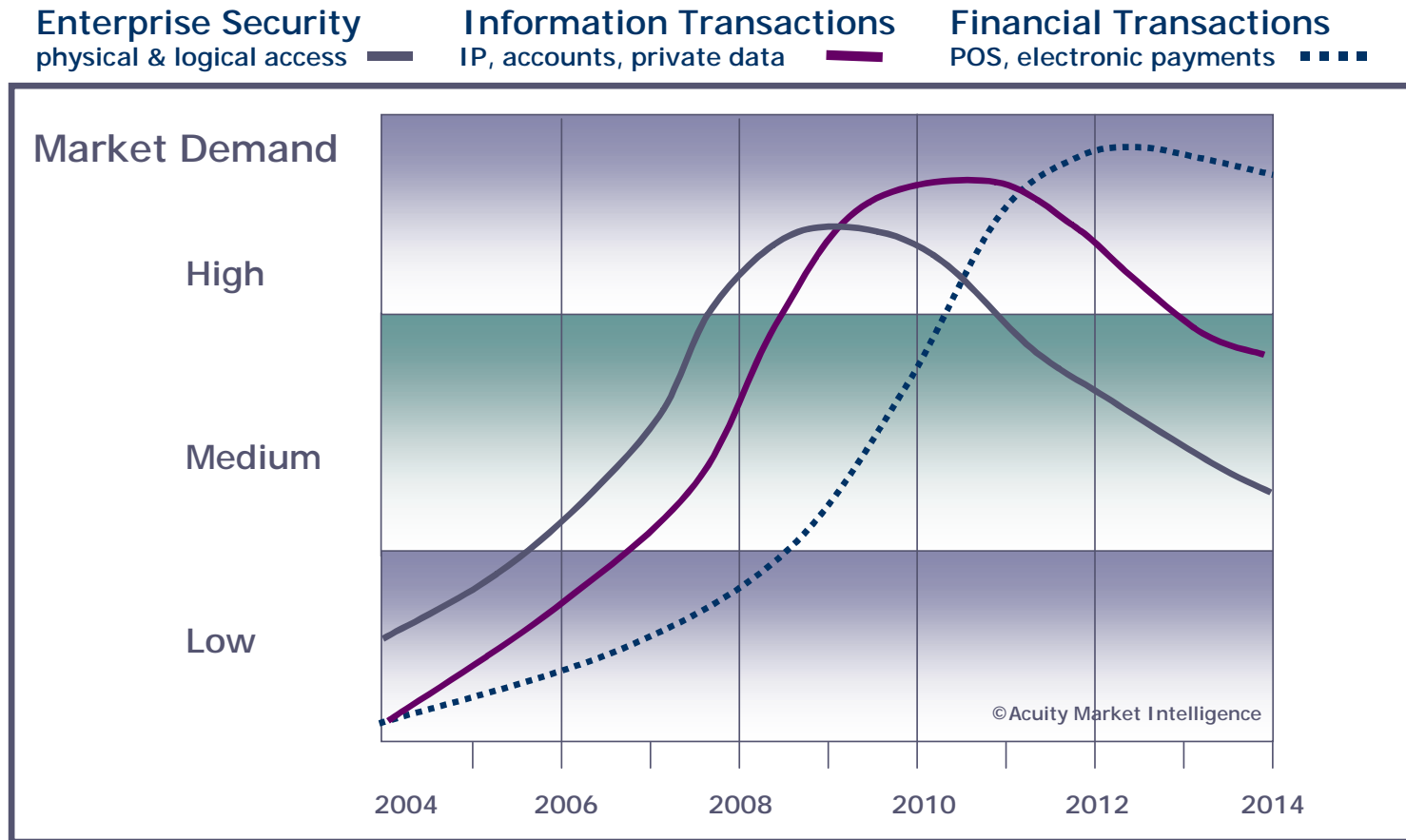
Iris Transformation Drivers
Mass Public Deployment

- Emergence of Asia Pacific
  - Hygiene Concerns
- "Do Nothing" Biometrics
  - No User Positioning
  - No User Action
- Changing Nature of Requirements
  - Application Domains
    - Personal
    - Public/Commercial
    - Civil/LE
- Transactions

Iris Transformation Drivers
Biometric Modality Evolution

- AFIS – low cost, ubiquitous criminal/civil ID
- Finger – freebie embedded in personal devices
- Face – across application domains, limited targeted purposes
- Signature – public/commercial contracts
- Voice – personal and public commercial phone based transactions
- Vein – touchless prevails for public/commercial applications where active user involvement desired
- Hand – fades away
- Iris – public/commercial touchless, "do nothing"

Iris Market Snapshot

Today	⟶	2020

Today

Limited Deployment

Expensive

Awkward

Bulky Capture Devices

Mediocre User Experience

Algorithm Dependency

Limited Distance

Proactive Subject Positioning

"High End" Applications

Minimal Solutions Capability

2020

Ubiquitous

Low Cost/High Performance

Flexible Form Factors

Embedded Capture Devices

Algorithm Agnostic

Broad Distance Range

Personal Device Integration
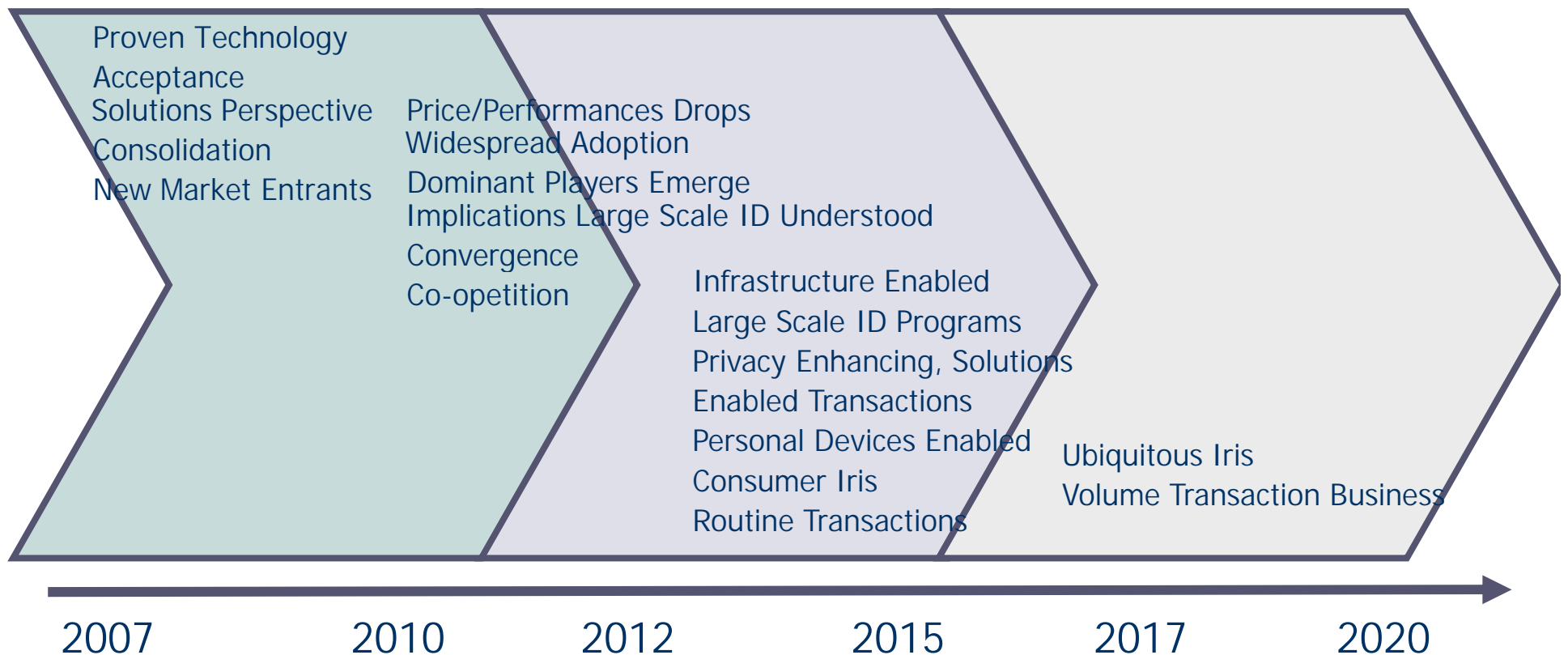
Passive Subject Acquiring

Solutions Portfolio

Consumer Control

Citizen vs Consumer Use

Iris Market Evolution

Transformation Timeline

Proven Technology
Acceptance
Solutions Perspective
Consolidation
New Market Entrants

Price/Performances Drops
Widespread Adoption
Dominant Players Emerge
Implications Large Scale ID Understood
Convergence
Co-opetition

Infrastructure Enabled
Large Scale ID Programs
Privacy Enhancing, Solutions
Enabled Transactions
Personal Devices Enabled
Consumer Iris
Routine Transactions

Ubiquitous Iris
Volume Transaction Business

2007   2010   2012   2015   2017   2020

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Keys to Iris Evolution
Transformation Components

Bridging the "Human-Machine Identity Gap"

Market Requirements	Technology Capabilities
☞ Embedded	☞ Flexible Form Factors
☞ Low Cost/High Performance	☞ Distance Capture
☞ Built in Extensible Security	☞ Subject Finding
☞ No/Low user Impact	☞ Surveillance
☞ Hygienic, Non Invasive	☞ Environment Tolerant
☞ 100% Solution	
Total Solutions	**Business Models**
☞ Operating Environment Crafted	☞ Transactions
☞ Human Factors Considerations	• Information & Financial
☞ Ease of Enrollment	• Personal, Commercial, & eGovernment
☞ Legal, Regulatory	☞ Service Based
☞ Privacy/Civil Liberty Protection	

Perspective

Driving the Future

A confluence of factors including the emerging central role of the Digital Identity in IT, population mobility and workforce decentralization, demand for eGovernment services, near ubiquitous reliance on digital transactions, and the inevitability of broadband access everywhere will require a level of authentication available only through the use of biometrics.

The entry of sophisticated, well funded market players with technology expertise in high resolution image capture, large scale data management and high speed processing, and pattern recognition and matching algorithms from varied fields such as robotics, astronomy, and intelligent video elevate technological capability and provide the requisite knowledge for the industry to leverage this opportunity and experience sustained growth.

Iris based access, identity, and surveillance applications will become integral to a range of solutions including border control, government ID programs, ATM usage and facilities, information and transactions security at nuclear and chemical plants, top secret military and intelligence facilities, and major financial institutions. Iris recognition will become a preferred method of authentication for two primary reasons. Capture technology will become increasingly more sophisticated operating accurately regardless of environmental conditions. Biometric authentication that does not require the user to "do anything" e.g. position themselves in relation to or have physical contact with a reader, will be prove safer (no transmission of germs) and more convenient for users.

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Questions?

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The Future of Biometrics
Market Analysis, Segmentation & Forecasts
Insight into the Trends, Drivers & Opportunities
that will Shape the Industry through 2020

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