



Mobile Biometrics: Identity Disrupted

The Rise of True Digital Identity

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Smart Card Alliance Member Meeting
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About Acuity Market Intelligence

The *Definitive Source* for Biometrics Market Intelligence

- Strategic Research Consultancy Founded in 2001
- Identity Focus: Mobile Biometrics, Automated Border Control, Secure Documents
- Consistently delivers *thought-provoking, data-driven* insight and analysis
- Proven record of accurately forecasting market trends
- Research Reports on Automated Border Control, National IDs, EPassports
- **NEW REPORT: *The Global Biometrics and Mobility Report***



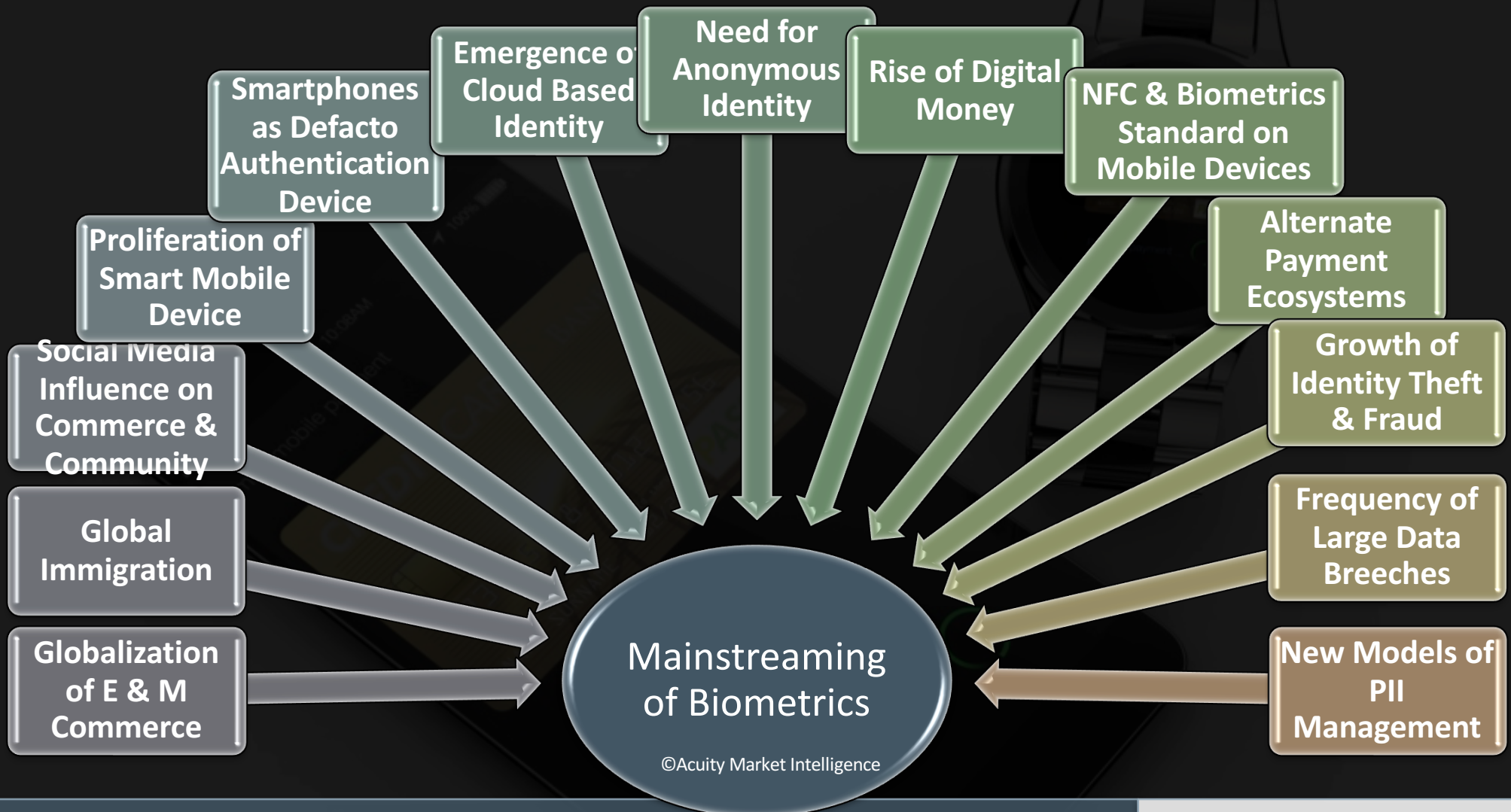
Today's Discussion: Mobile Biometrics

Identity Disrupted: *The Rise of Digital Identity*

- Converging Market Forces
- Acuity's *Uncharacteristically* High Market Forecasts
- Critical Elements of Market Disruption
 - Evolution of Digital Identity ➡ Identity 3.0
 - Rise of “Consumer Centricity”
- Identity Market Disruption
 - Mobile Commerce Disrupted
 - Monetization Model Disrupted
 - Identity Credentials Disrupted
- Mobility Fuels Biometric Boom; Redefines Digital Identity

Converging Market Forces

Mobility is the driving force that will unleash the long awaited biometric Revolution!



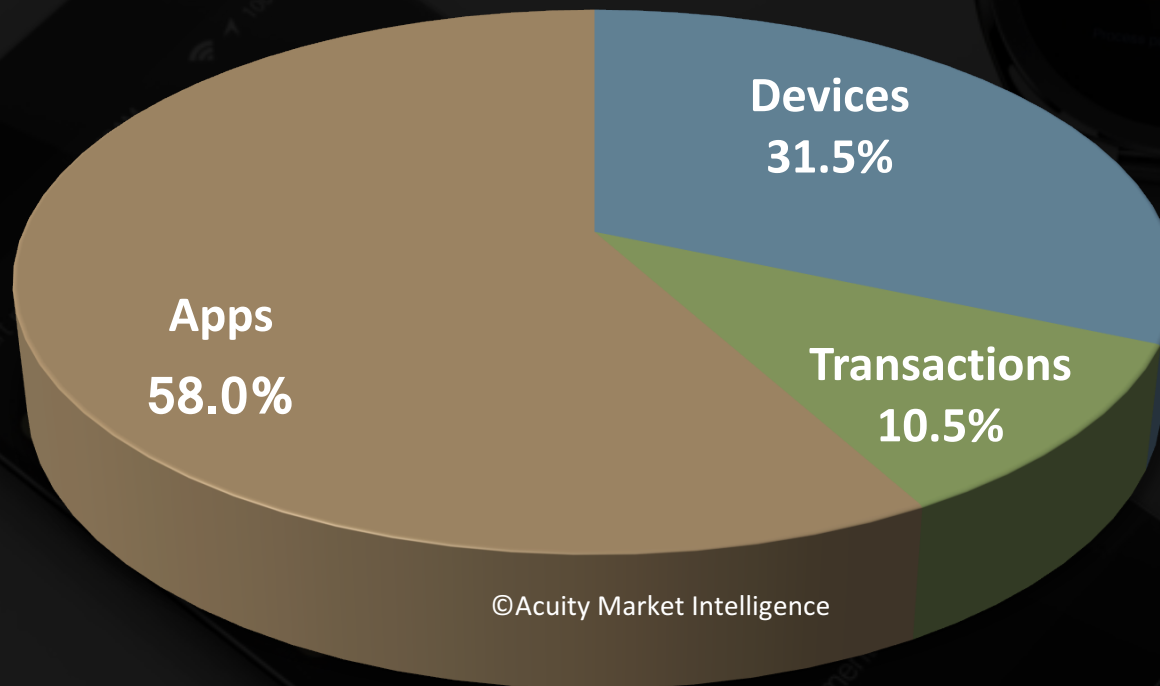
The Ashley Madison Hack. Really?

- The “Tipping Point’ for Internet Security?
- Other BIG hacks?
 - Best Known: SONY hack BUT that was Celebrities
 - Retail Hacks abstractions unless they impact YOU
 - Credit Cards databases: Cards replaced, direct loss covered
- Ashley Madison is Different
 - Intimate Information
 - Personal proclivities
 - Real Consequences – divorce, job loss, public shaming, etc.
 - Public indifference to privacy violation?
- Will this cause consumers to hesitate to share personal information or demand more safeguards?

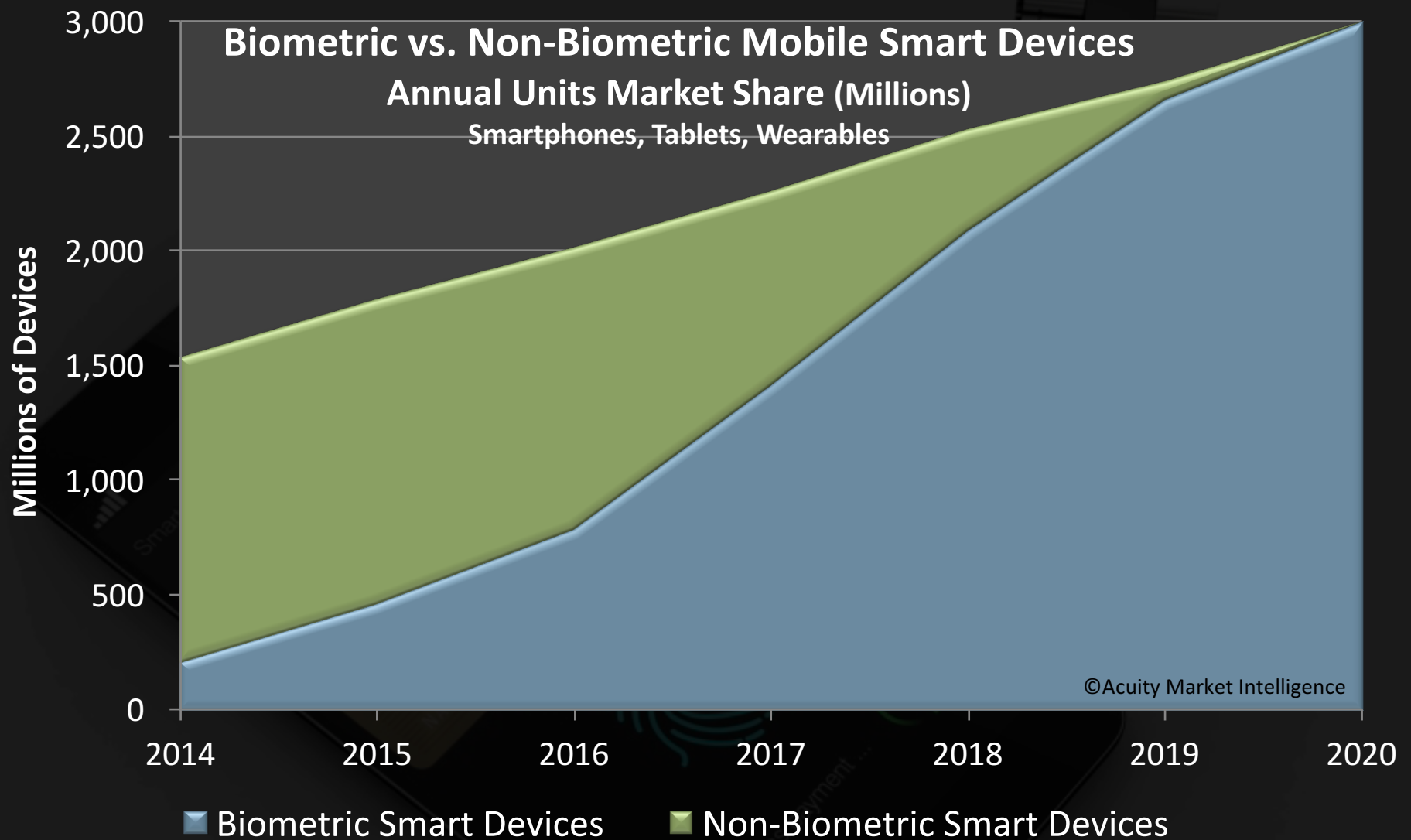
Forecast Period Revenue by Segment

Total Forecast Period Market Revenue Exceeds \$117 billion

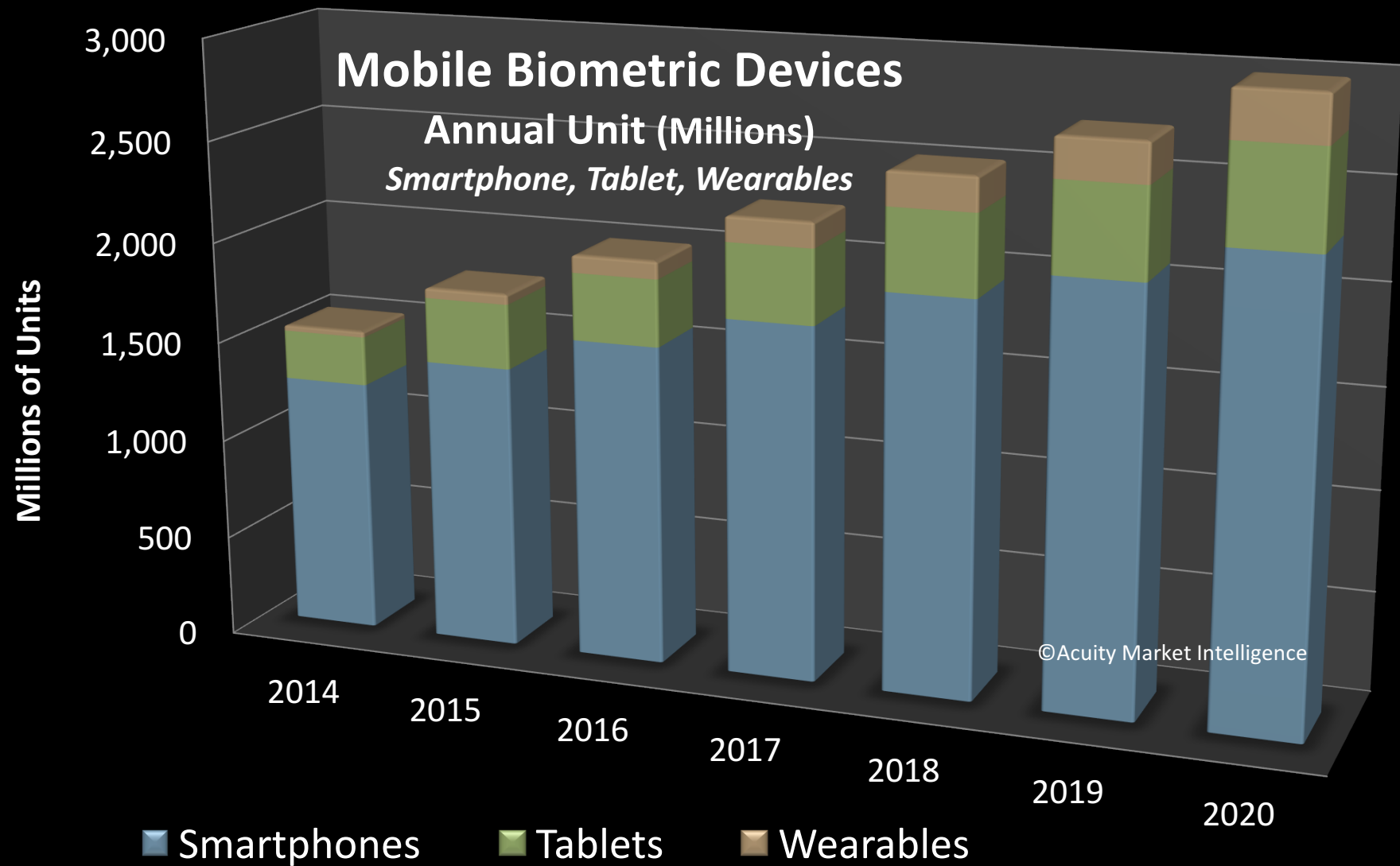
Mobile Biometrics Market Share by Segment Total Revenue 2014 - 2020



Biometric vs. Non-Biometric Devices



Mobile Biometrics Devices Annual Units



Acuity's *Uncharacteristically* High Forecasts

Acuity	2020	Global Mobile Biometrics Market	\$34.6 Billion
6Wresearch	2020	Global Biometrics Market	\$21.9 Billion
Market and Markets	2020	Next Generation Biometrics Market	\$24.5 Billion
BCC Research	2019	Global Market For Biometric Technologies	\$27.5 billion
BIS	2020	Global Biometric Market	\$25.31 Billion
Tractica	2024	Worldwide Biometrics Technology Market	\$14.9 Billion
Tractica	2024	Mobile Biometric Device And Software Revenue	\$3.5 Billion
Acuity	2020	Biometric Smart Mobile Device Shipped Annually	3 Billion
Tractica	2024	Fingerprint Readers In Mobile Devices Shipped Annually	1 Billion
Acuity	2020	Smart Mobile Device With Embedded Biometrics	100%
Tractica	2024	Smartphone And Tablets With Fingerprint Readers	34%
Acuity	2020	Wearable Biometric Devices Installed Base	410 Million
Goode Intelligence	2020	Wearable Biometrics Devices Accessing Banking Services	160 Million
Acuity	2020	Mobile Biometrics Apps Downloaded Annually	5.5 Billion
Goode Intelligence	2020	Mobile Banking App Downloads	620 Million
Acuity	2019	Mobile Biometrics Apps Downloaded Annually	3.7 Billion
Juniper Research	2019	Biometric Authentication Application Downloads Annually	770 million

Acuity's *Uncharacteristically* High Forecasts

- Acuity sees MASSIVE Market Opportunity & Scope
- DISRUPTION on Multiple Fronts:
 - Transformation and Convergence of Commerce and Privacy Driving Consumer Control of Identity and PII.
How will consumers use mobile devices to navigate complex, interconnected global ecosystems expecting frictionless access to information, communities, goods and services while their privacy is protected and their PII secured?
 - Consumer Centric *Data Aggregation* Ecosystems Transfer Data Ownership from the Enterprise to the Individual.
How will enterprises that rely on the monetization of PII - accumulation, management, use, and sale - evolve or be displaced as a massive global platform based on personal mobile devices disrupts conventional business models?
 - Identity Credentials Merge with Mobile Devices.
How will “Identity Tokens” and associated security features translate as they become digital identity credentials merged with mobile devices?

Identity Disrupted

- Critical Elements of Market Disruption
 - Evolution of Digital Identity ➔ Identity 3.0
 - Rise of “Consumer Centricity”
- Market Disruption
 - Mobile Commerce Disrupted
 - Monetization Model Disrupted
 - Identity Credentials Disrupted



Evolution of Digital Identity → Identity 3.0



- Centralized site-centric
- Privacy of identity limited by privacy of the site
- Comprised of data attributes/characteristics
 - Username & password
 - Online search activities
 - Birthdate
- Key areas of concern security & privacy

- Decentralized user-centric
- Emphasis on simple/open method of identifying transactions
- Transparent ID flexible across Internet
- Can be Social Media based - Facebook, Google, Disqus
- Key areas of concern security & privacy

- “Next Gen” digital Identity
- Combines strong authentication with anonymity
- Increases privacy and provides user-centric control over PII
- Creates secure, consumer centric ecosystem for commerce

Rise of “Consumer Centricity”



Consumer Centric
Identity

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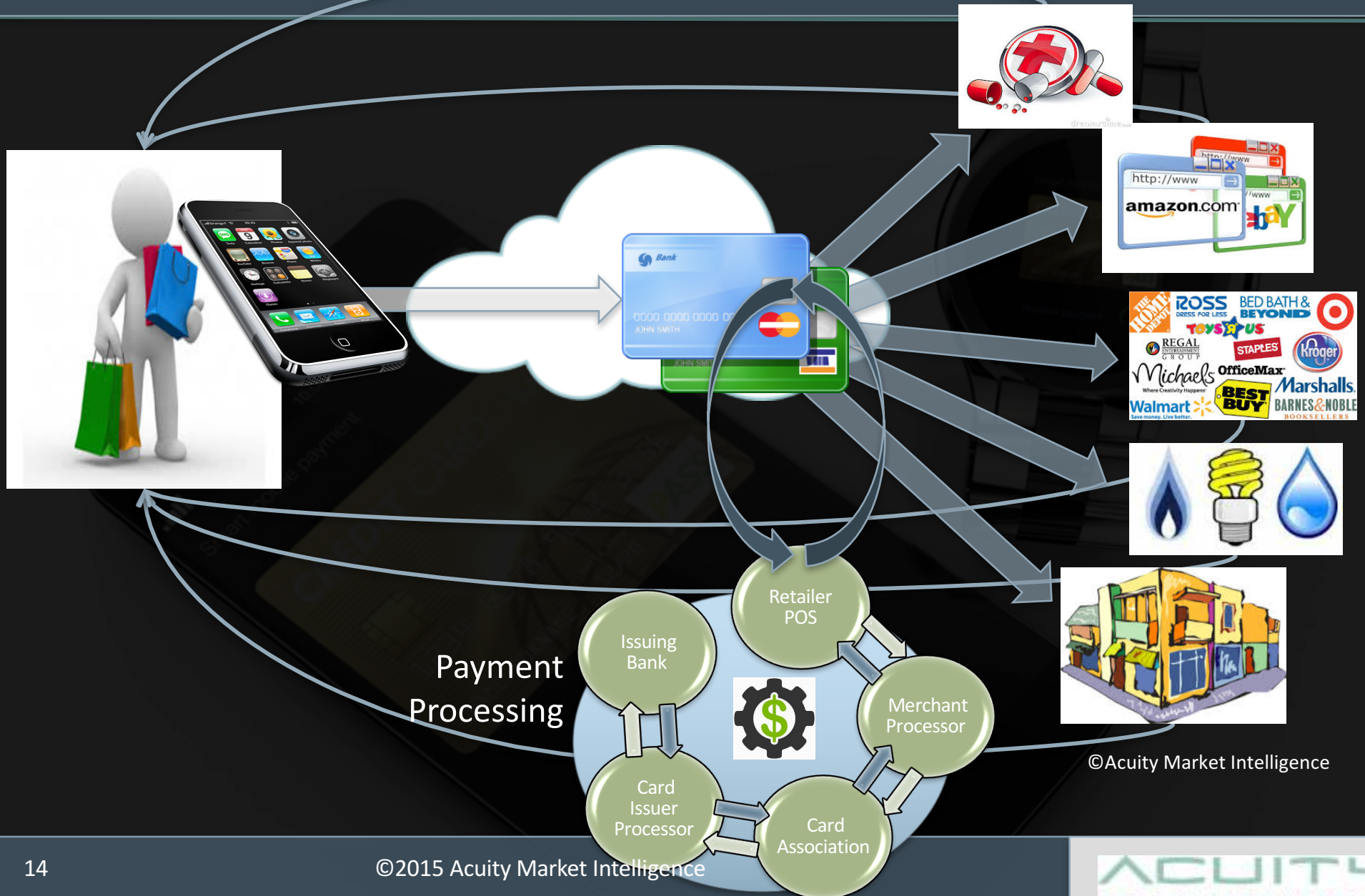
Consumer Centric
Data Ownership/Privacy

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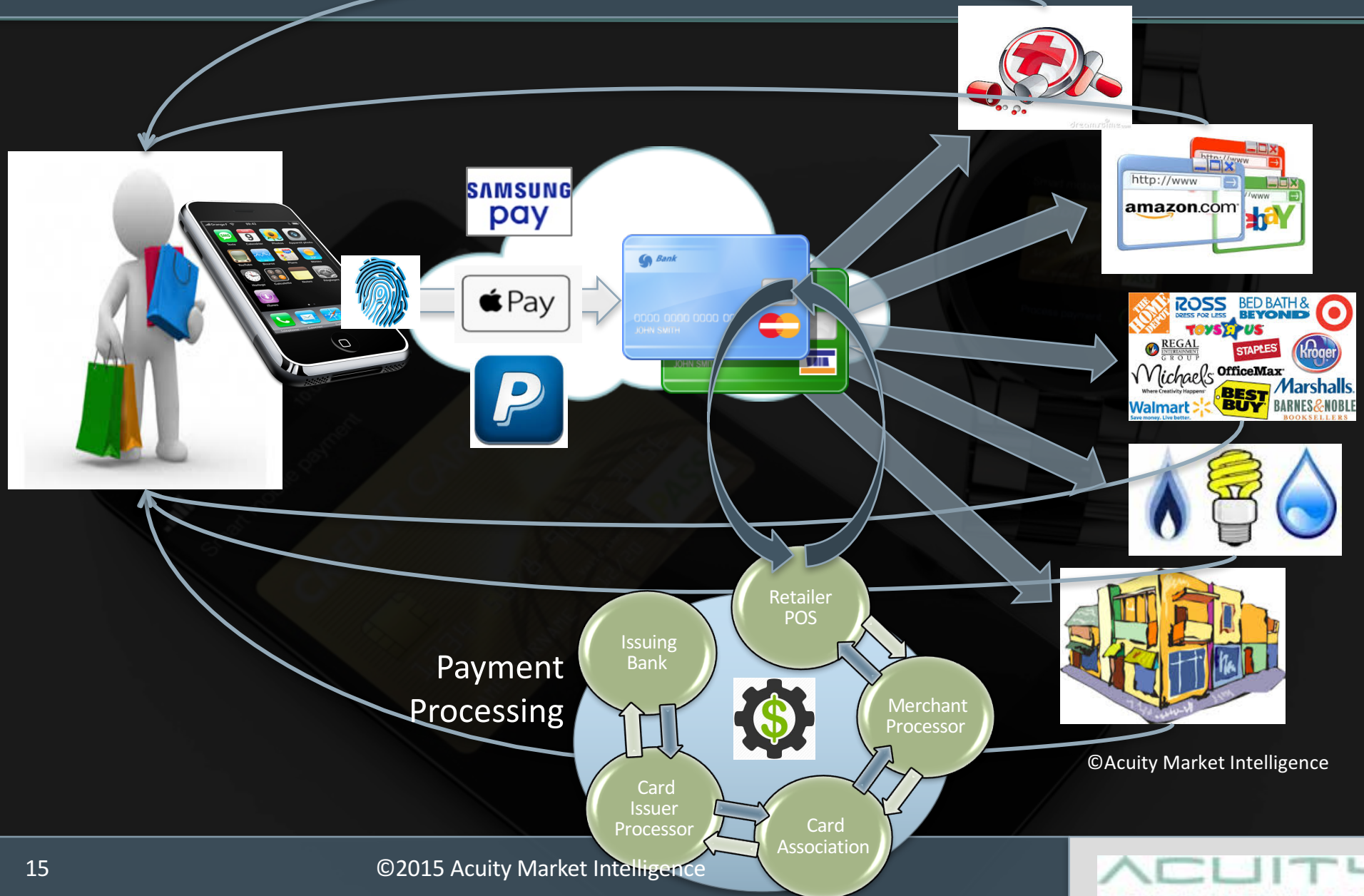


Consumer Centric
Commerce

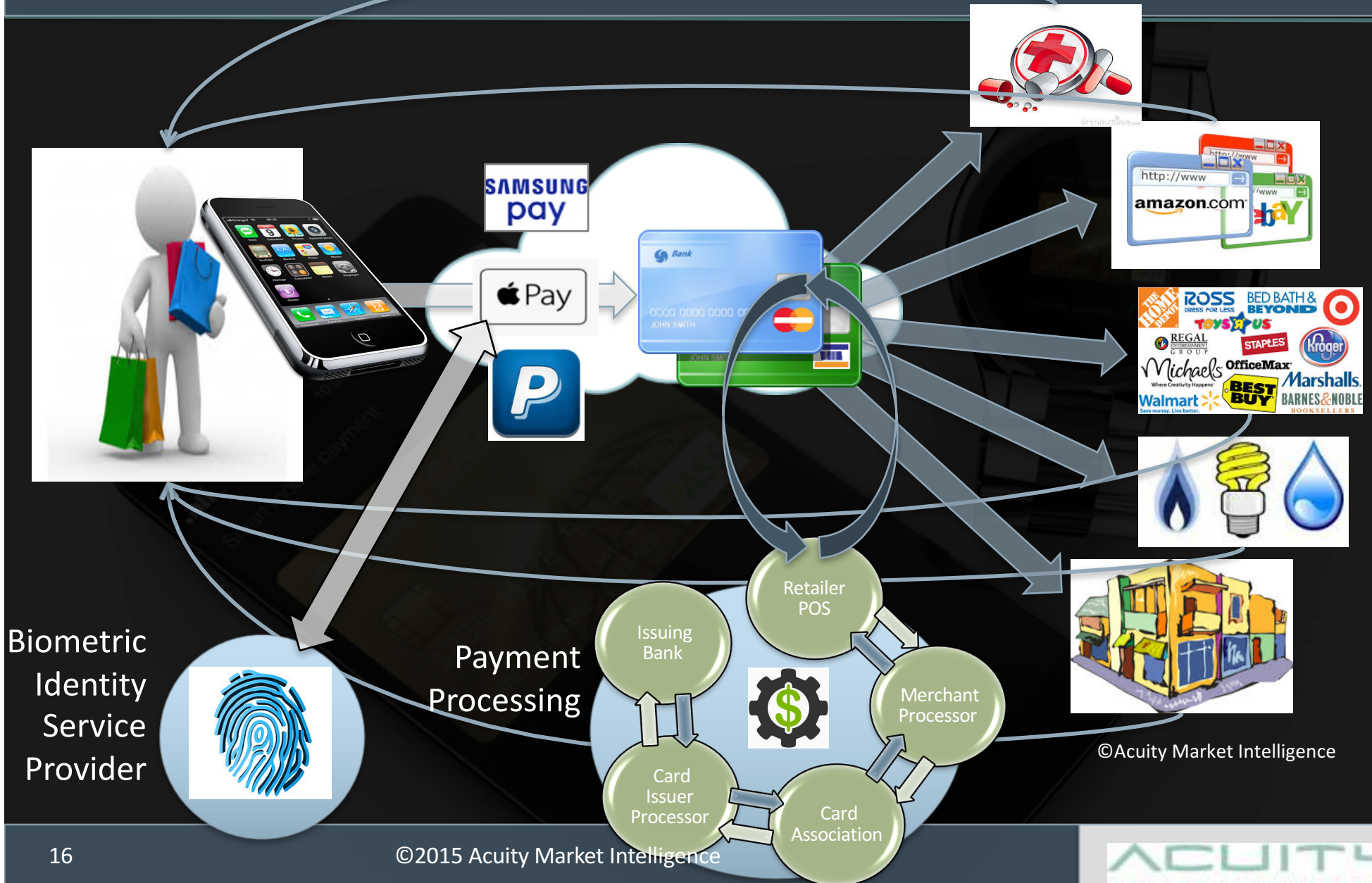
Mobile Commerce



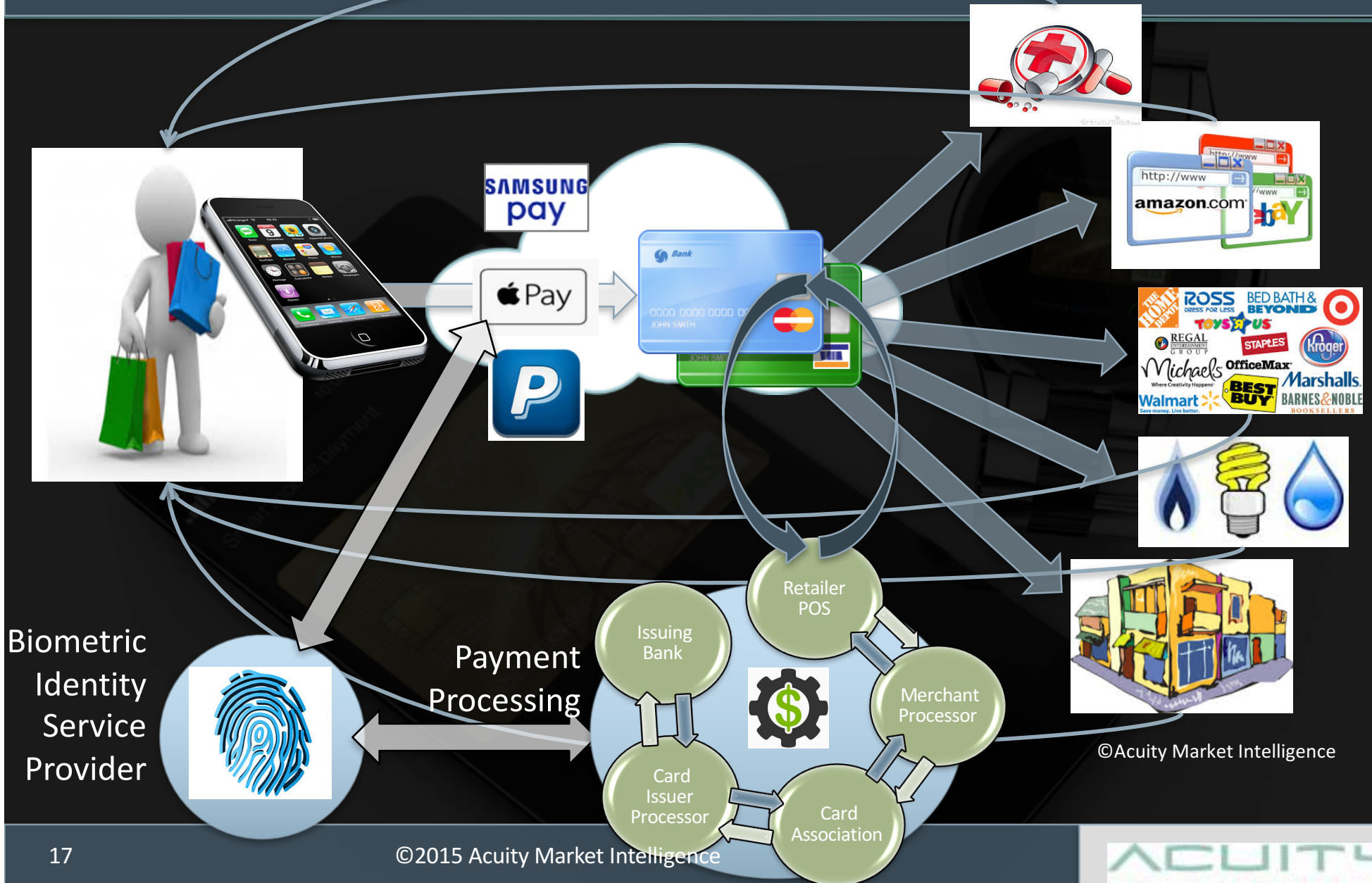
Mobile Commerce Convenient



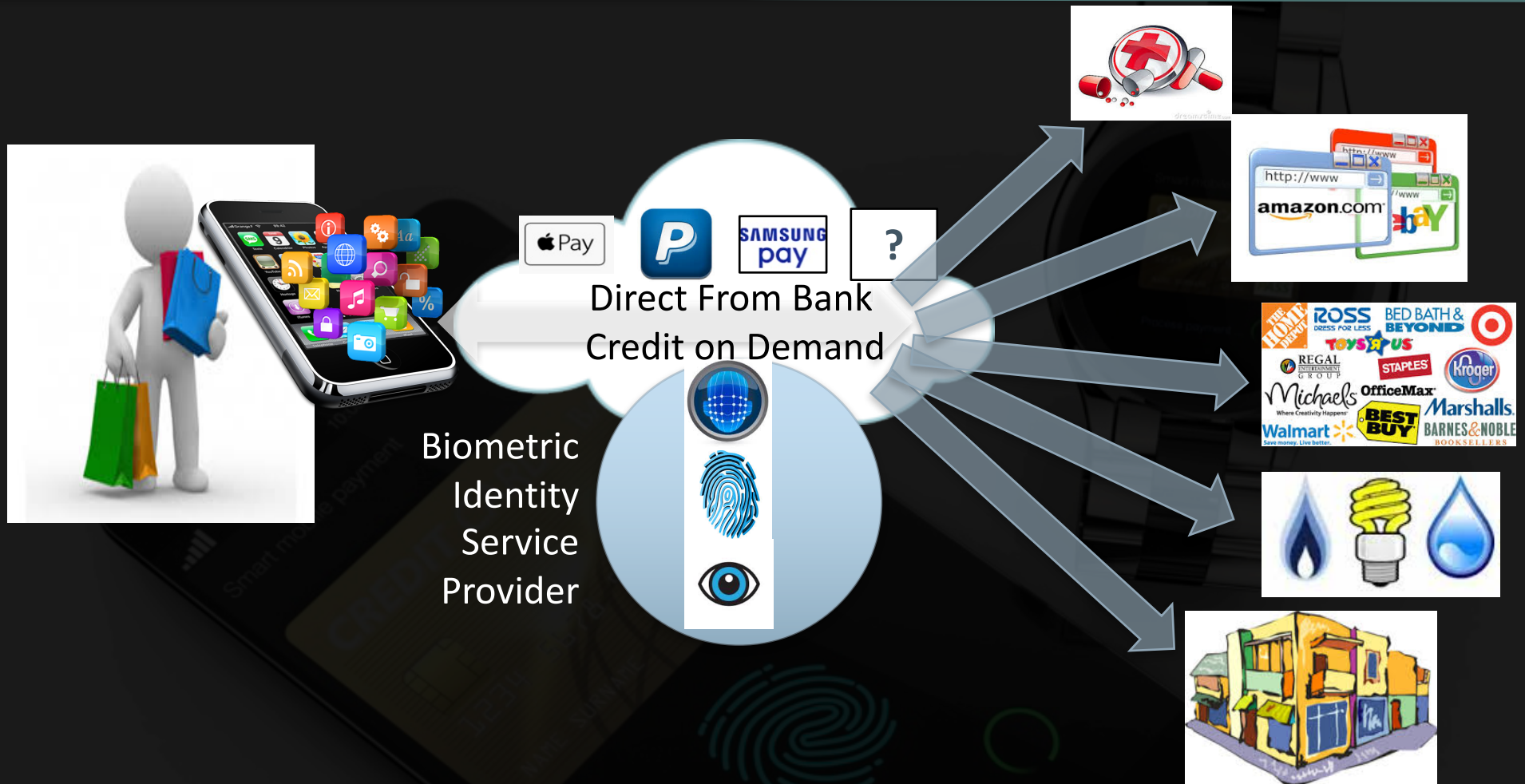
Mobile Commerce Transformed



Mobile Commerce Transformed



Mobile Commerce Disrupted



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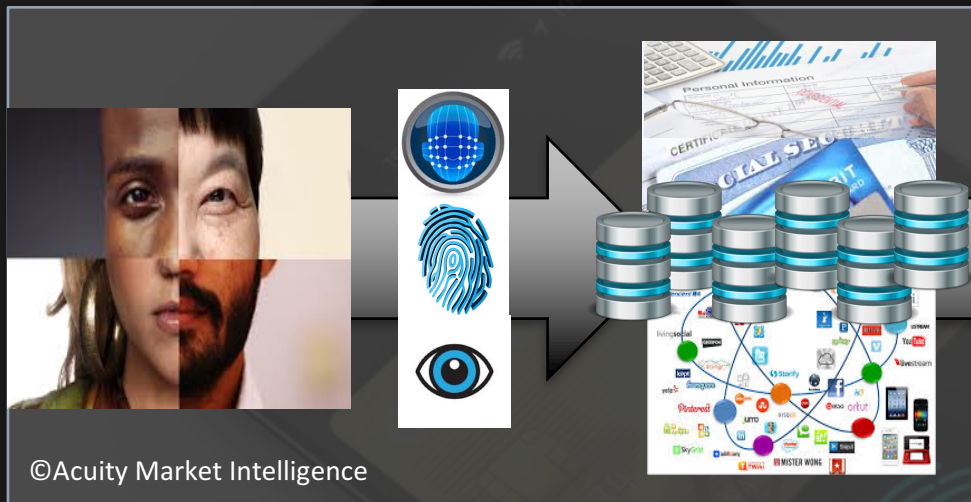
Monetization Model



Monetization Model Transformed



Monetization Model Disrupted



Identity Credentials



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Smarter Credentials



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Mobile Credentials



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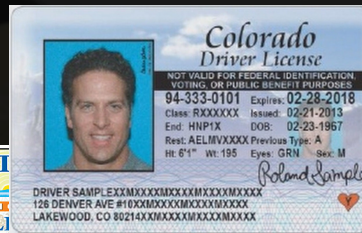
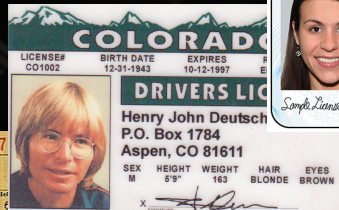
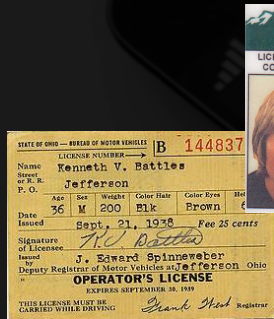
Identity Credentials Disrupted



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Identity Credentials Disrupted

Evolution of Secure IDs: Driver's License



Historical

Present Day

Tomorrow

Mobility Fuels Biometric Boom; Redefines Digital Identity

- Global biometrics market poised to explode
 - Digitalization of Identity is Inevitable
 - Ubiquitous Biometrics/NFC enabled Smartphones provide global platform
 - Biometrics “seized” to reduce user friction & simplify user experience.
 - Biometrics have potential to disrupt global commerce, shift power/control of consumer PII away from “monetization” enterprises.
 - Government and Enterprises will take advantage of Digital Credentials to simplify authentication, reduce token infrastructure costs, and improve security.
 - Turf over which major consumer technology companies – HW, SW, device, and services – will battle with established banks, CC, payment processors, retailers, etc plus emerging start-ups.

Thank You!

Visit www.acuity-mi.com
for more insight and analysis.

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Available NOW: Global Biometrics Industry Report
Coming SOON: *Biometric Mobility and the Enterprise*