Mobile Biometrics Annual Revenue

Mobile Biometric Revenue
Annual Revenue ($ Millions)
Devices, Transactions, Apps

CAGR = 66.6%

Millions of Dollars

- $35,000
- $30,000
- $25,000
- $20,000
- $15,000
- $10,000
- $5,000
- $0

$1,621.48 — 2014
$4,084.63 — 2015
$8,151.87 — 2016
$14,802.13 — 2017
$23,503.03 — 2018
$30,307.50 — 2019
$34,629.47 — 2020

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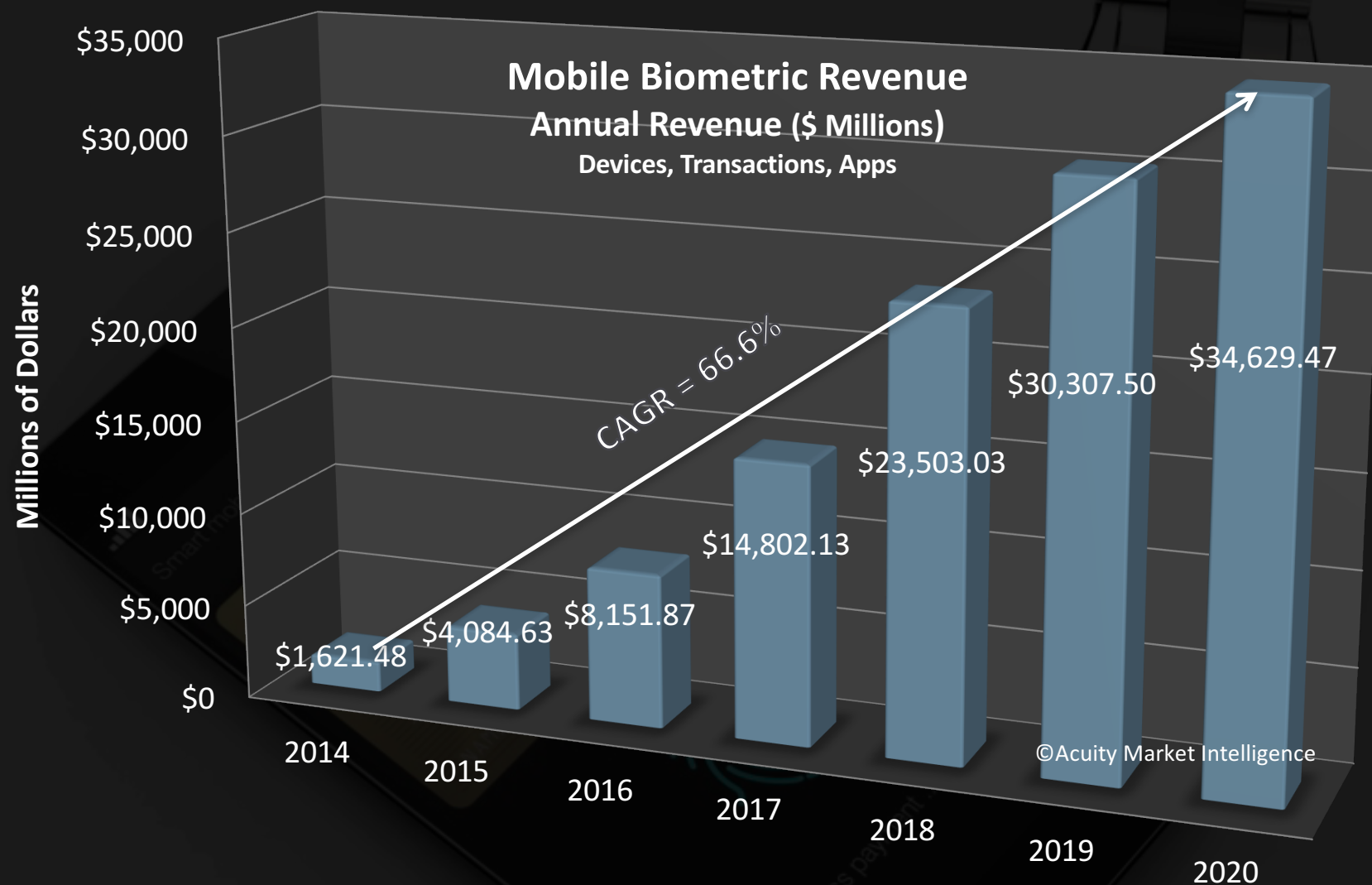
Biometric vs. Non-Biometric Devices

Biometric vs. Non-Biometric Mobile Smart Devices
Annual Units Market Share (Millions)
Smartphones, Tablets, Wearables

Millions of Devices

3,000
2,500
2,000
1,500
1,000
500
0

2014   2015   2016   2017   2018   2019   2020

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■ Biometric Smart Devices   ■ Non-Biometric Smart Devices

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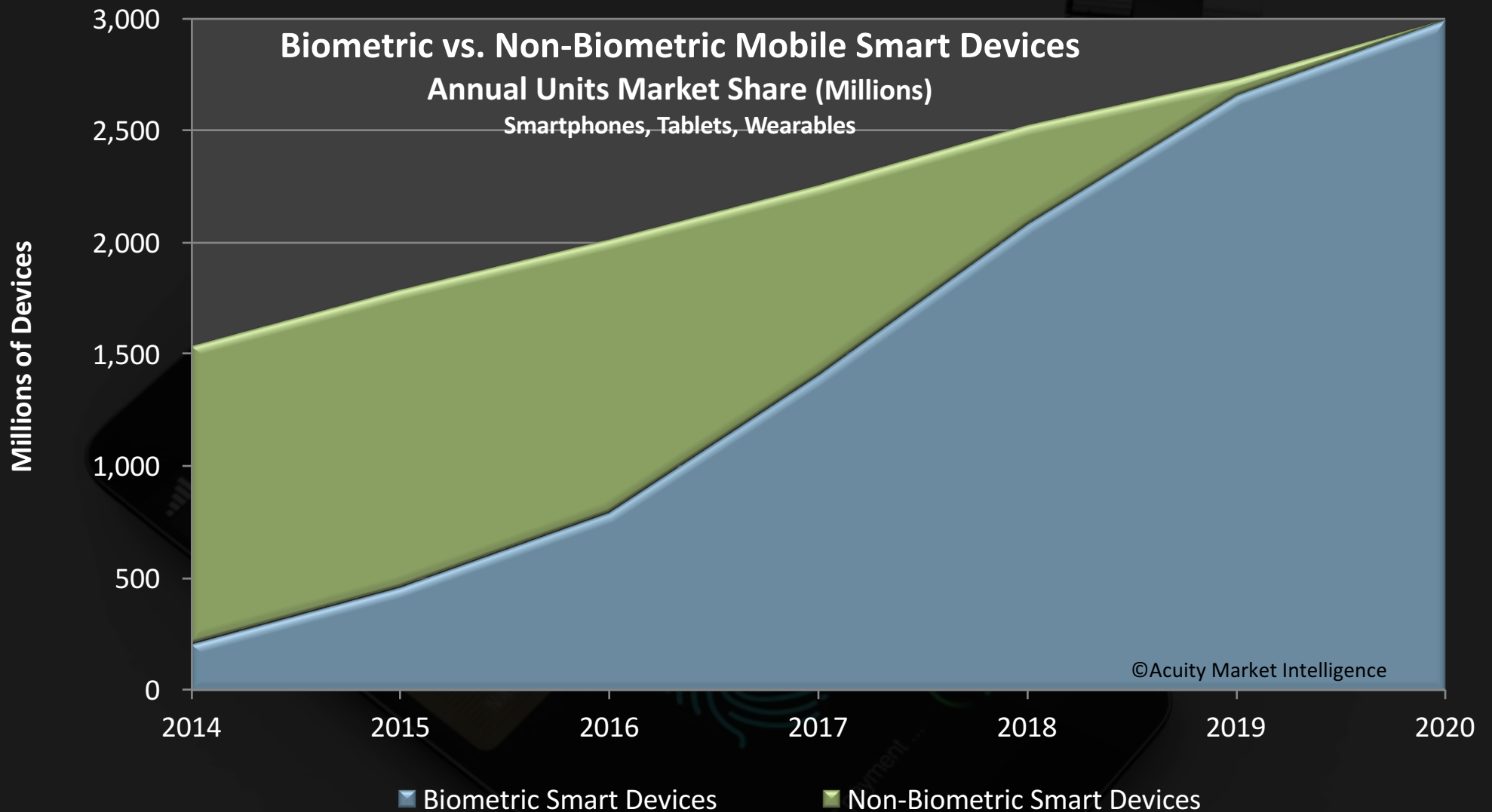
Mobile Biometrics Devices Annual Units

Mobile Biometric Devices
Annual Unit (Millions)
Smartphone, Tablet, Wearables

Millions of Units

3,000
2,500
2,000
1,500
1,000
500
0

2014   2015   2016   2017   2018   2019   2020

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■ Smartphones   ■ Tablets   ■ Wearables

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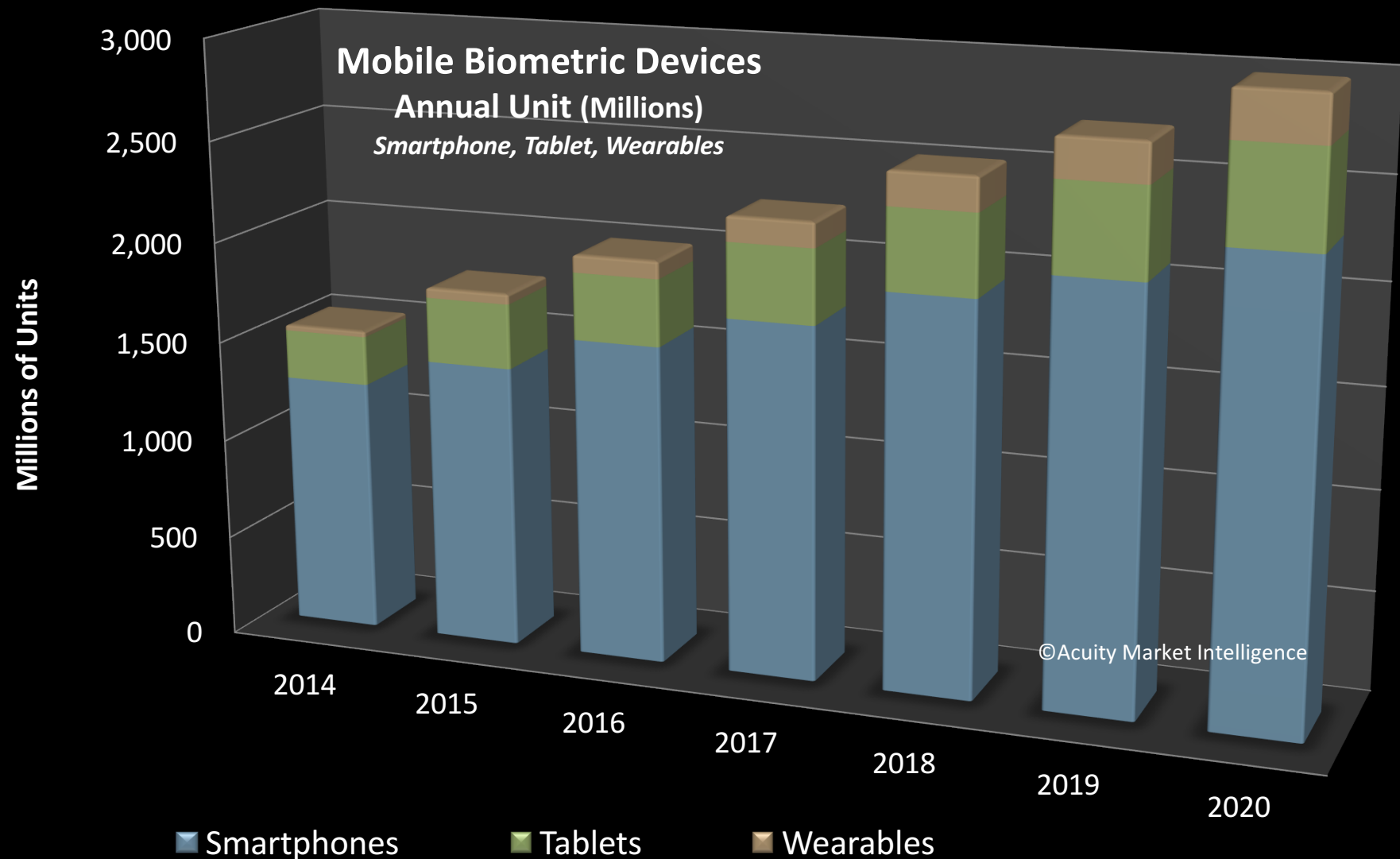
Biometric App Annual Downloads

Mobile Biometric Smart Device App Downloads
Annual Units (Millions)

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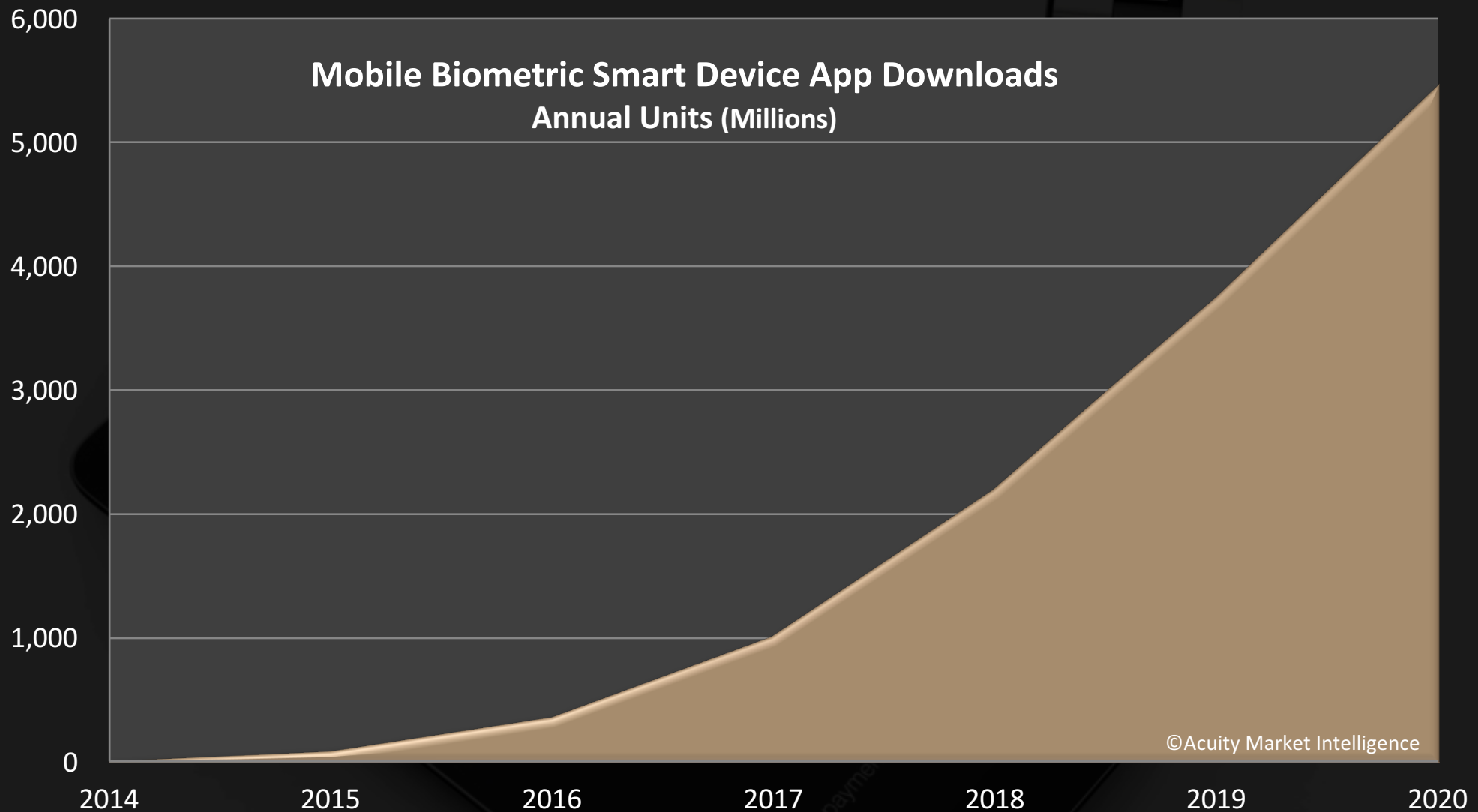
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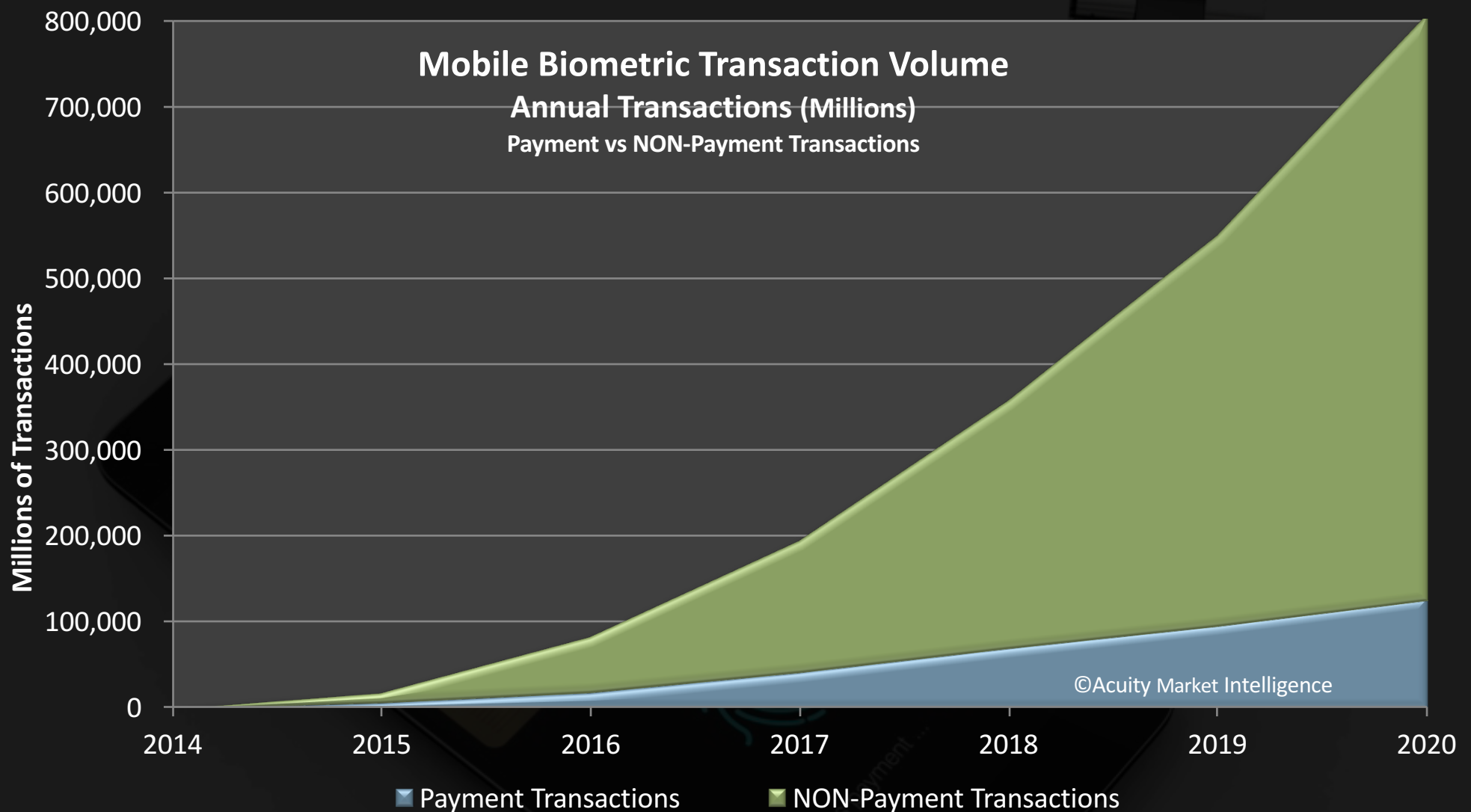
# Evolution of Digital Identity ➡ Identity 3.0

Identity 1.0

Identity 2.0

Identity 3.0

Identity 1.0
- Centralized site-centric
- Privacy of the identity limited by privacy of the site Users
- Comprised of characteristics or data attributes:
  - Username and password
  - Online search activities
  - Date of birth
  - Social security number
  - Medical history
- Key areas of concern security & privacy
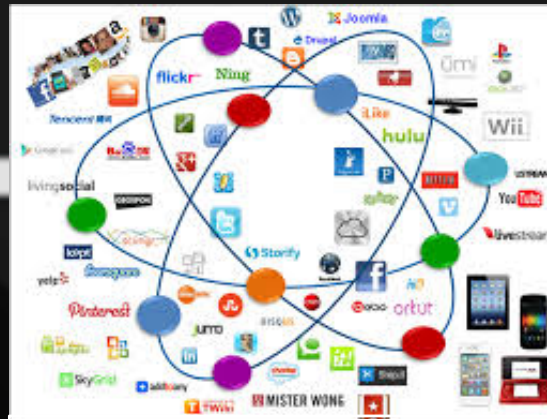
Identity 2.0
- Decentralized user-centric
- Emphasis on simple and open method of identifying transactions
- An ID that is transparent and flexible across Internet
- Can be Social Media based
- Sign in with Facebook, Google Plus, Disqus, etc.
- Key areas of concern security & privacy

Identity 3.0
- "Next Gen" digital Identity
- Combines strong authentication (BIOMETRICS) with anonymity
- Increases privacy and provides user-centric control over PII
- Creates secure, consumer centric ecosystem for commerce

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Rise of "Consumer Centricity"

Consumer Centric
Identity

\+

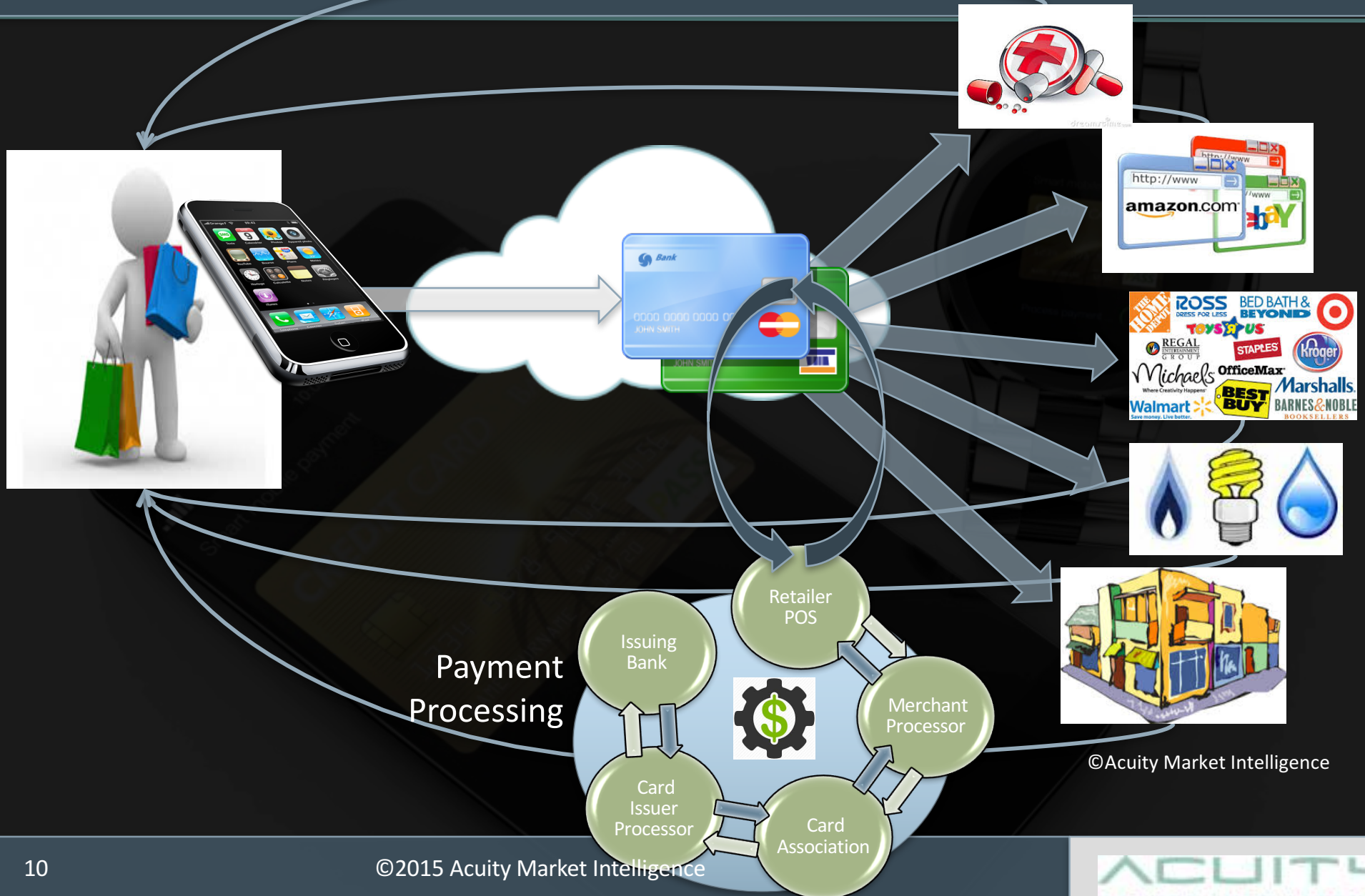Consumer Centric
Data Ownership/Privacy
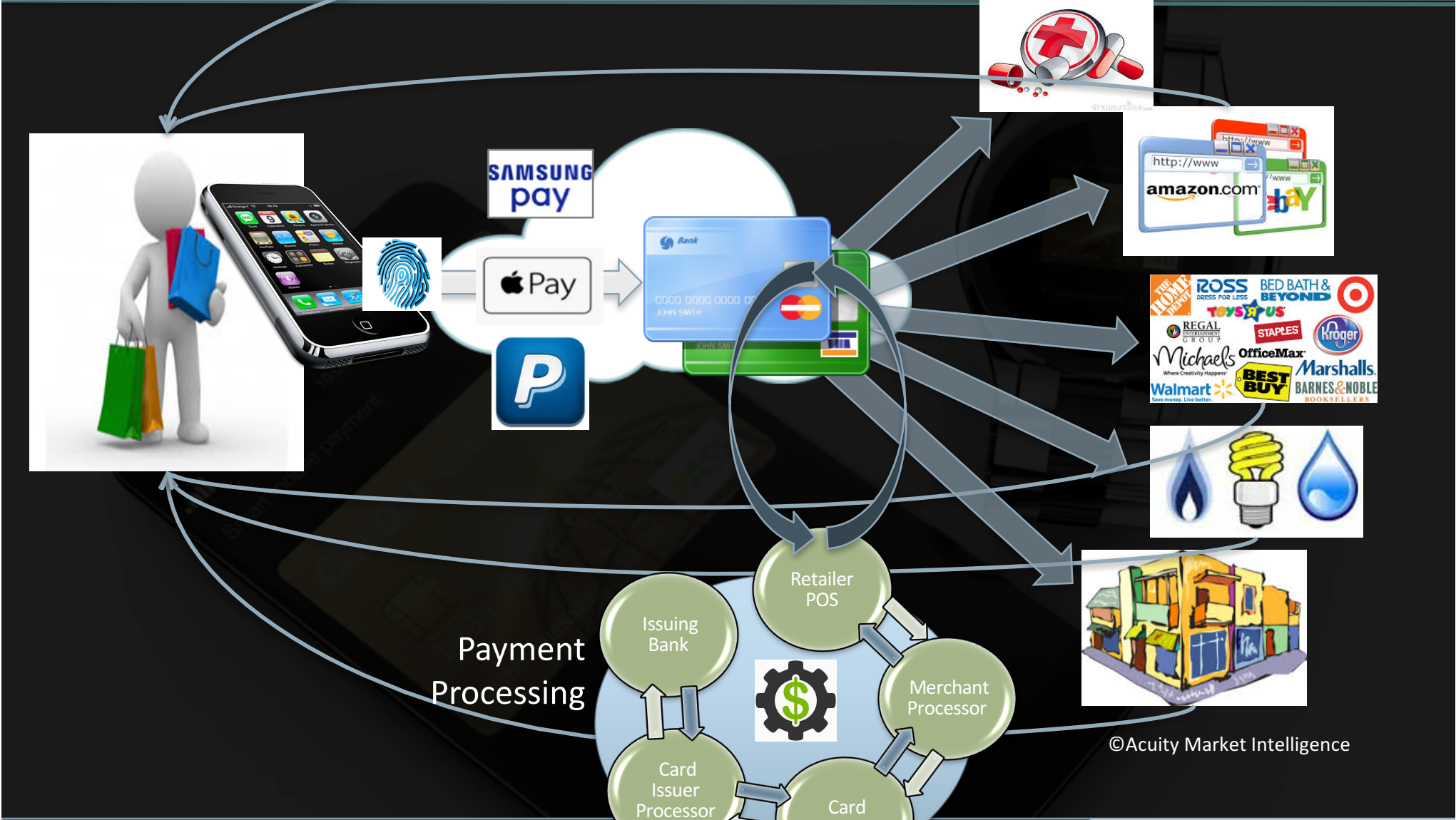
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Consumer Centric
Commerce

Identity Market Disruption

- MASSIVE Opportunity and Scope on Multiple Fronts:
  - Transformation and convergence of commerce and privacy as they relate to consumer control of identity and PII.

    How will consumers use mobile devices to navigate complex, interconnected global ecosystems that protect their privacy and secure their PII while maintaining frictionless access to information, communities, and goods and services ?

  - Impact on data aggregation based businesses as consumer centric 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?

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Mobile Commerce 1.0

Payment
Processing

Retailer
POS

Issuing
Bank

Merchant
Processor

Card
Issuer
Processor

Card
Association

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Mobile Commerce 1.5

Payment
Processing

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Mobile Commerce 2.0

Biometric
Identity
Service
Provider

Payment
Processing

Retailer POS

Issuing Bank

Merchant Processor

Card Issuer Processor

Card Association

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Mobile Commerce 2.0

SAMSUNG pay

Apple Pay

Biometric Identity Service Provider

Payment Processing

Issuing Bank

Retailer POS

Merchant Processor

Card Issuer Processor

Card Association

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Mobile Commerce 3.0 "Disrupted"

Apple Pay PayPal SAMSUNG pay **?**

Direct From Bank
Credit on Demand

Biometric
Identity
Service
Provider

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Monetization Model
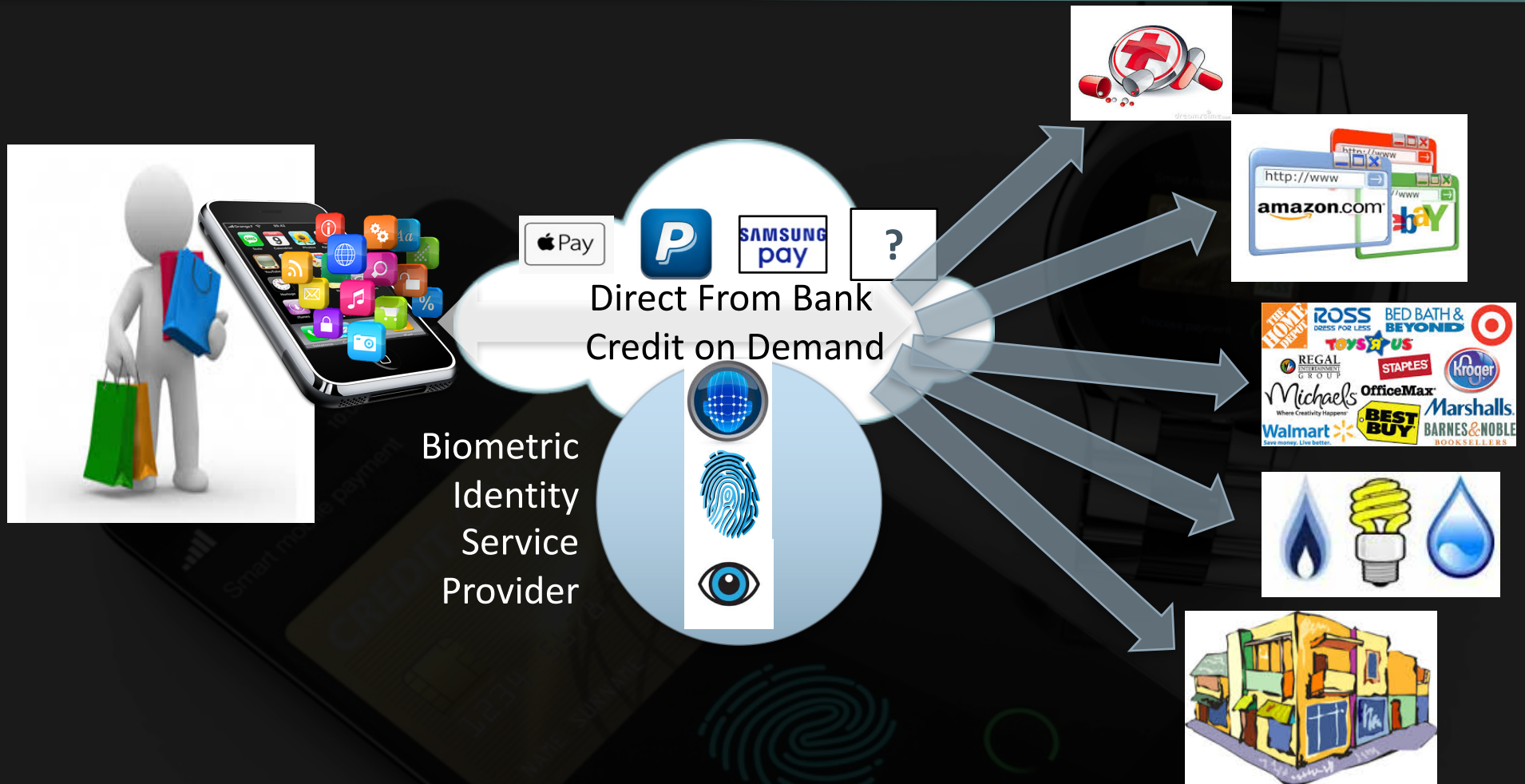
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Monetization Model Identity 3.0

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Monetization Model Disrupted

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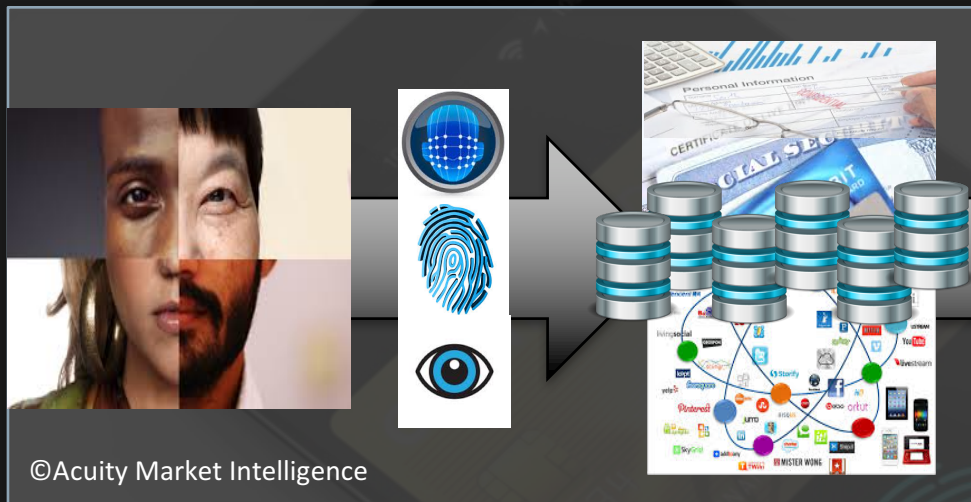
Identity Credentials

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Smarter Identity Credentials

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Identity Credentials Transformed

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Identity Credentials Disrupted

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