

# IDEX Biometrics Investor Presentation



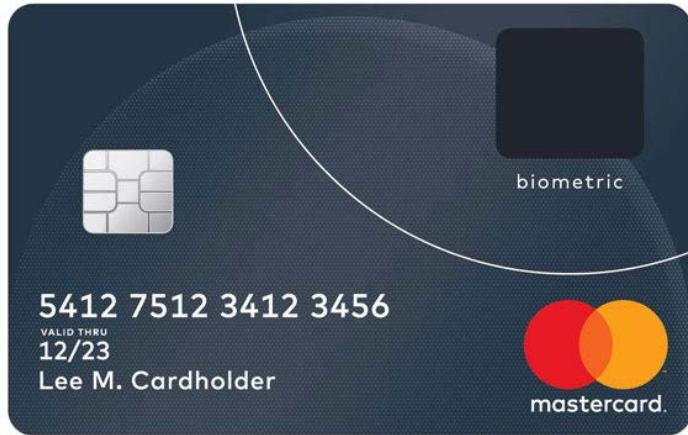
November 12, 2020

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# IDEX Biometrics

Next evolution of payment cards



Lower fraud

Identity protection

Top of wallet

Low cost

More convenient

# Investment Highlights

<b>Massive Addressable Market</b>	<ul style="list-style-type: none"><li>• 22B payment cards in circulation and 5B new cards issued every year <sup>(1)</sup></li><li>• Contactless cards have accelerated significantly; &gt;75% of EU transaction now contactless, &gt;50% of Americans now using contactless payment cards</li><li>• USD 2B+ biometric payment cards by 2024; 200% plus CAGR for biometric payment card shipments</li></ul>
<b>Large-Scale Certification</b>	<ul style="list-style-type: none"><li>• First certified and commercially ready cards delivered in Q1 2020</li><li>• Certification with China UnionPay and one other global payment network (EMVCo® certified)</li><li>• Both platforms represent 70% of all global branded payment cards</li></ul>
<b>Sales and Pipeline Momentum</b>	<ul style="list-style-type: none"><li>• <b>Europe:</b> Orders from several customers received</li><li>• <b>Asia:</b> Certifications achieved, and production orders received</li><li>• <b>Other:</b> USD 6M contract with financial markets data provider, first production orders delivered in 2020</li></ul>
<b>Defensible IP / Technology</b>	<ul style="list-style-type: none"><li>• <b>TrustedBio:</b> full system solution enables highest performing and lowest cost cards in the industry</li><li>• 200 plus patents granted or pending patents</li><li>• Full EMVCo® certified on card level as well as component level</li></ul>
<b>Highly Experienced Management</b>	<ul style="list-style-type: none"><li>• Accomplished executive team with experience bringing new technologies to market</li><li>• Management and board with significant experience managing public companies</li></ul>

# Recent Highlights

- Commercial momentum accelerating with issuers and banks for biometric payment cards
  - Covid-19 rapidly accelerating contactless payments
  - Multiple new orders from new integrators and geographies suggest broad demand
- Payment card market
  - Production orders from a Tier 1 global payment card manufacturer
  - Large volume order from Zwipe
  - Volume orders from: Hengbao, one of the largest smart card companies in China
  - Design wins and orders from new global card manufacturers
- Other markets
  - Production shipments ongoing to the large IT and financial services customer
  - Volume production orders for both current and next generation products from customer in Korea
- Banking industry executives added to the board of directors and strategic advisory committee
- Filed registration statement with US SEC to dual list on the Nasdaq

# PAYMENT CARD MARKET



# Consumer Benefits



## Security

- Eliminates lost/stolen, friendly fraud
- Identity protection
- Fully encrypted, resistant to logical attacks
- Peace of mind



## Convenience

- Fast, simple, secure transactions
- Hygienic, “touch-free” payments; no pins, battery anxiety or connectivity issues



## Prestige

- High “cool factor”, like metal cards
- Differentiated, high-technology payment cards consumers will pay for








# Bank/Issuer Benefits

## Drivers

## Benefits

Example: 1 million card portfolio converted to biometrics

 Prevention / elimination of Lost & Stolen and Friendly Fraud	<ul style="list-style-type: none"><li>• <i>Estimated benefit range \$1.2 - \$2M per annum</i></li></ul>
 Incremental revenue <i>Replacement of cash transactions</i>	<ul style="list-style-type: none"><li>• <i>Estimated benefit range \$400K - \$1M per annum</i></li></ul>
 'Top of Wallet' effect	<ul style="list-style-type: none"><li>• <i>Estimated benefit range \$1.2M - \$2.4M M per annum</i></li></ul>
 Account growth effect	<ul style="list-style-type: none"><li>• <i>Estimated benefit range \$1M - \$2M per annum</i></li></ul>
 Monetizing the card value added -> incremental card fee	<ul style="list-style-type: none"><li>• <i>Direct income – e.g. incremental card fee of 1\$ / card / month leads to \$12Mio per annum for 1 million cards</i></li></ul>

Estimated net cash benefit flow range \$8 Mio ↔ \$16 Mio per annum

*Note: The business case is market and Issuer dependent - it needs to be established and tuned in light of business parameters relevant to individual Issuers*



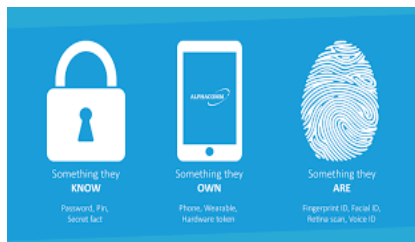
# Market Trends – Very Positive



**COVID:**  
Contactless limit increased in 31 countries.  
As of April **75% of all Mastercard Transactions** in EU were contactless (source: Mastercard)



**Contactless mandate**  
All EU payment terminal Contactless from 12/19

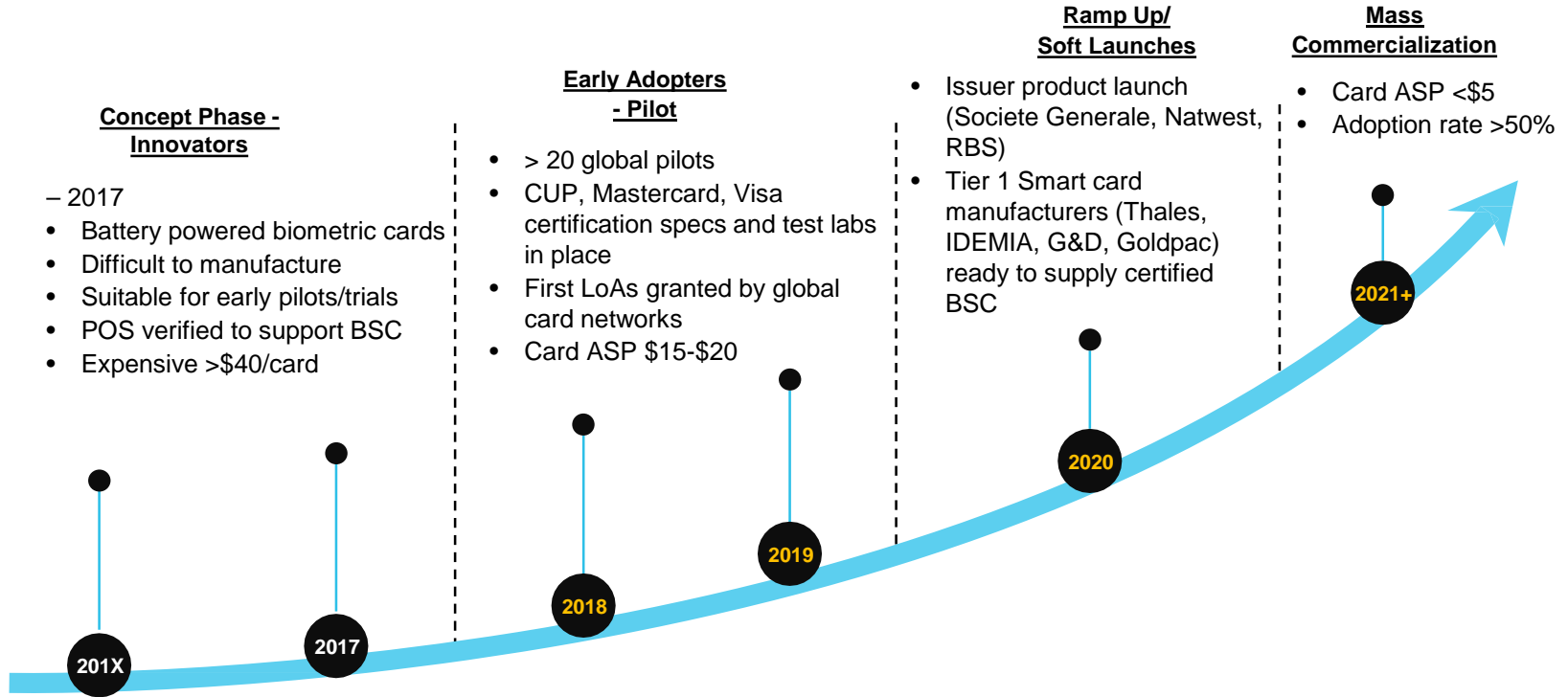


**Strong Customer Authentication:**  
Mandated in EU and taking effect starting in 2020/2021



**CUP, Mastercard and VISA** have **specifications**, process and multiple **certified test labs** ready for biometric card certification testing

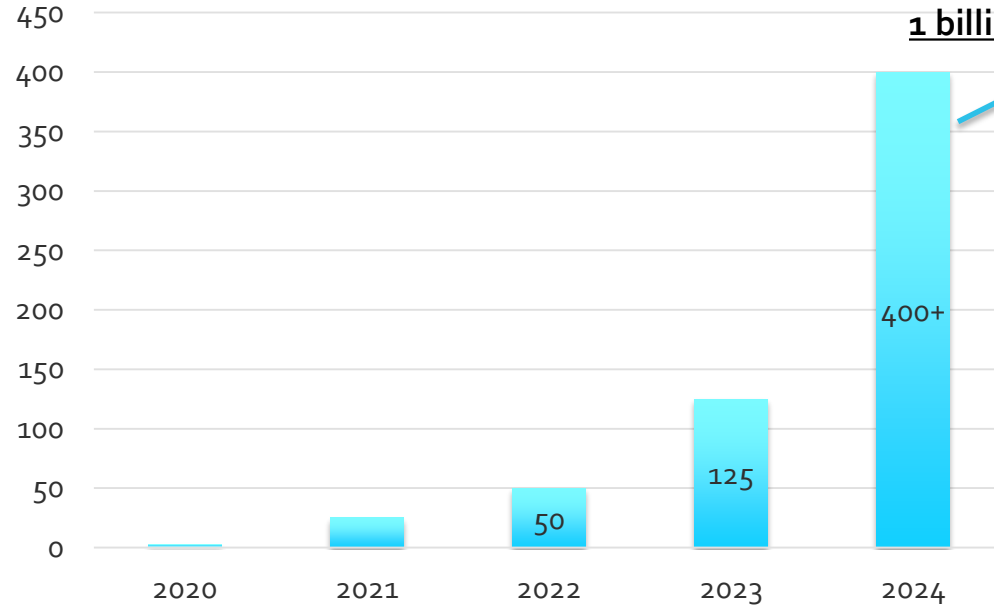
# Market activation milestones



# Payment Cards - a Very Large and Growing Market

**22 billion payment cards in circulation and growing to over 29 billion by 2023<sup>1</sup>**

**~5 billion new smartcards issued annually**



**Projected number of biometric payment card shipments (millions of units)**

- Payment cards projected to continue strong growth
- Contactless growing even faster driven by:
  - Covid-19 and touch-free
  - Ease of use
  - Fast authentication speeds
- Biometrics add security and convenience
  - Infrastructure already in place
  - Removes contactless limits
  - Helps issuers remain top of wallet

Sources: 1. Nilson Report, 2. Chart based on average of industry analyst estimates excluding highest estimate, 2024 is IDEX estimate



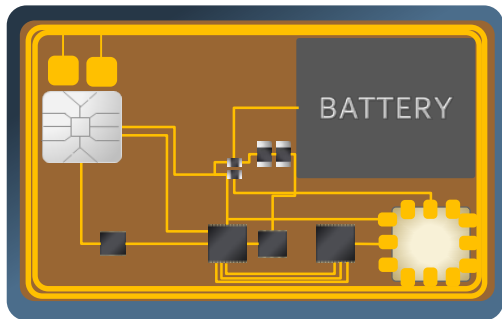
# PRODUCTS AND TECHNOLOGY



# Lowering Manufacturing Complexity and Card Cost

*TrustedBio™ yields cost, performance, and reduced manufacturing complexity*

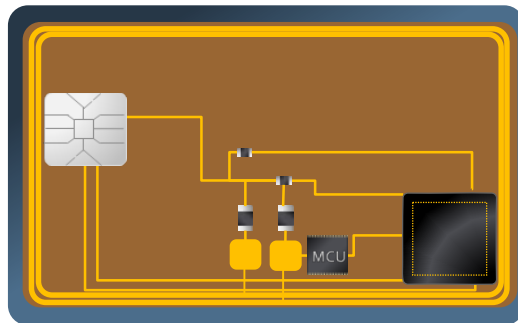
\$40+



## FIRST GENERATION CARD

- Battery/supercapacitor
- Complex and expensive flexible PCB (MCU, companion chip, basic PMU)
- Complex embedding (12+ connections to sensor)

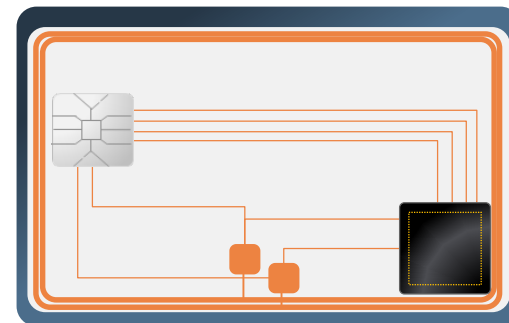
~\$15 - \$20



## CURRENT GENERATION CARDS

- No battery or supercapacitor
- Simplified flexible PCB with discrete components (MCU, PMU)
- Improvement of manufacturing/ACF Compatible

~\$5



## IDEX TrustedBio™ CARDS

- Fully Integrated, Improved Performance
- Passive inlay, copper-wire compliant
- Stabilized manufacturing process (4 or 8 pads)

# IDEX's Optimized Biometric System-on-Chip Advantage

IDEX off-chip BSoC

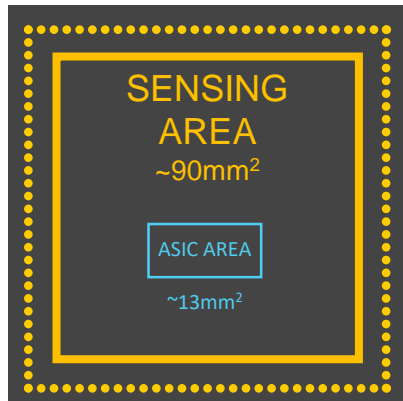
Competitor Silicon Sensor

**Features:**

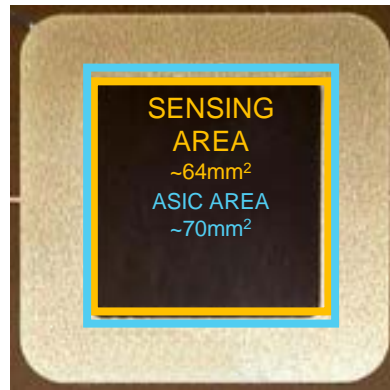
- Large sensor area
- Image capture
- **MCU:** image processing and feature extract
- **PMU:** Energy harvesting and power management

**Additional Costs:**

- + SE: \$0.50-\$1.50
- + Mfg cost: \$~0.50



Vs.



**Features:**

- Limited sensor area
- Image capture only

**Additional Costs:**

- + MCU: \$1.50-\$2.00
- + FPCB/PMU/passives/assembly: \$3.50-\$4.50
- + SE: \$0.50-\$1.50
- + Mfg Costs: \$2.00-\$3.00
- ~\$7.50-~\$11.00**

**Key:**  
ASIC Area  
Sensing Area

ASP: ~\$3.50

~\$5.50

Resulting card cost: ~\$5.00 **\$15-\$20**

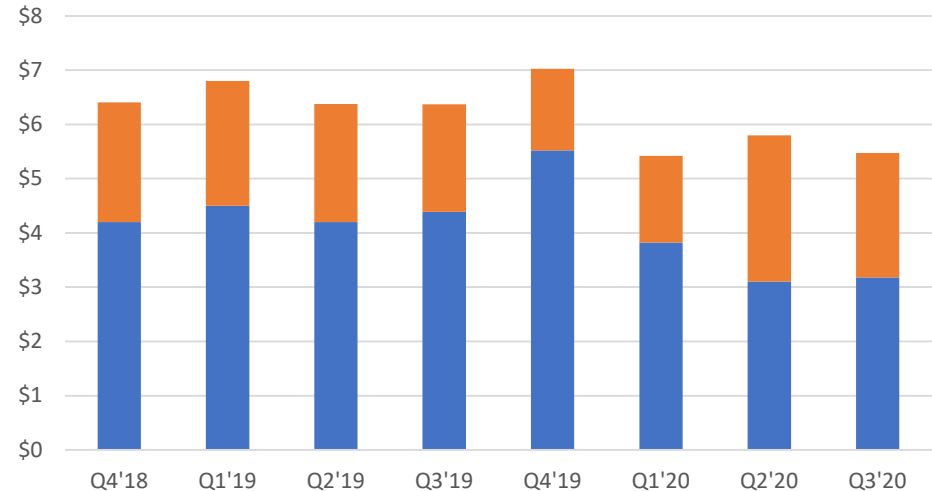
# Strong Operating Leverage in Financial Model

## Fabless semiconductor model:

- Complete solution including ASIC, Sensor, and Biometric Software
- 50%+ gross margins and stable opex at scale
- 30% operating margins at scale

## Stable operating expense model

Cash Operating Expenses<sup>1</sup> in USD (millions)



<sup>1</sup>Cash Operating Expenses is operating expense excluding stock compensation and development inventory and intangibles reserve related to a discontinued product in Q4 of 2019

# Investment Highlights

Massive Addressable Market

Large-Scale Certification

Sales and Pipeline Momentum

Defensible IP / Technology

Highly Experienced Management



Thank You

