

# IDEX Investor Update

## May 2021



May 18, 2021

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# Introduction



# IDEX Biometrics | At a Glance

Oslo Børs: **IDEX** Nasdaq: **IDBA**

Next evolution of payment cards

## COMPANY

Design, develop and deliver biometric fingerprint sensors, software and system solutions

## TECHNOLOGY

- Highly differentiated off-chip sensors and solutions
- > 200 patents filed and pending

## STRATEGICALLY POSITIONED

- One of only two worldwide suppliers
- Fabless semiconductor business model
- Partners and supply chain to support mass volumes
- Certified (EMVCo®) with two global payment platforms representing >70% of worldwide branded payment cards

## MARKET OPPORTUNITY

- 22 billion payment cards in circulation, growing to >29 billion by 2023<sup>1</sup>
  - ~5 billion new smartcards issued annually
- Adjacent market opportunities in Government ID, Access Control, Healthcare & IoT

## PRODUCTS AND SOLUTIONS

### Fingerprint Sensors & System Modules



### Enrollment Solutions





# Highly Experienced Leadership Team



**Vince Graziani**  
CEO



**James A. Simms**  
CFO



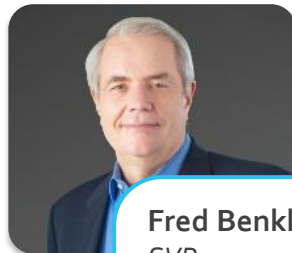
**Catharina Ekløf**  
CCO



**Stan Swearingen**  
SVP



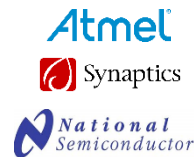
**Anthony Eaton**  
CTO



**Fred Benkley**  
SVP



**Chris Ludden**  
SVP



# Status / Overview



- ✓ **Continued execution on repositioning strategy from 2018**
- ✓ **TrustedBio™ extremely well-received**
  - Driving industry partnerships and customer engagements
  - Mass production ready; no supply chain issues today
  - Shipping to multiple customers and early-adopter IDEMIA in Q1
  - We anticipate revenue growth through Q4 based on pipeline
- ✓ **As adoption accelerates, we anticipate rapid growth of bookings**
  - Post-pandemic acceleration of card pilots globally
  - Known bank programs scheduled for ramp in 2022
  - Potentially significant volumes from rapidly emerging DC/EP
    - China initially, given aggressive target dates
    - ROW later, given >60 central bank studies underway

# Business Update



# Q1 '21 Commercial and Market Update

*Further momentum toward strategic objectives; well-positioned for expected growth*

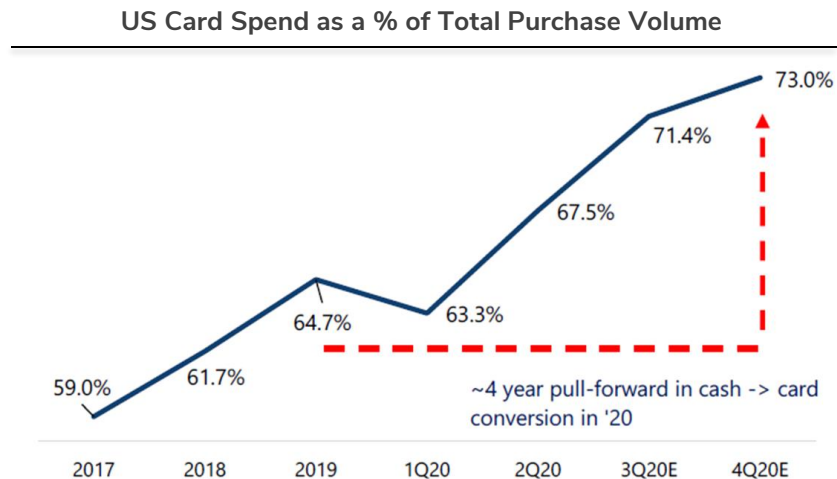
- ✓ **IDEMIA introduced its 2<sup>nd</sup> generation F.CODE™ cards**
  - IDEMIA's first Biometric Payment Card offering based on IDEX's TrustedBio™ sensor
  - Most integrated Biometric Payment Card solution available today
  - Industry-leading performance and component integration
- ✓ **Received second China UnionPay certification for biometric payment card**
  - Partner: Goldpac Group, a leading developer of financial services technologies
- ✓ **Progress in pursuit of Digital Currency Electronic Payment (DC/EP) initiative of the People's Bank of China**
  - IDEX featured in Digital RMB trials conducted by the Postal Savings Bank of China
  - Selected by Goldpac as a strategic technology partner; initial orders received for DC/EP solution
  - Chutian Dragon expanded collaboration with IDEX to include DC/EP solution



# Payment Cards – Favorable Market Mega-Trends

## Pandemic and Government Mandates Driving Accelerated Adoption

### Significant Pull-Forward in Transition from Cash to Card



Source: FRED, Nilson, Jefferies Estimates

### Adoption of Contactless Payment Accelerating

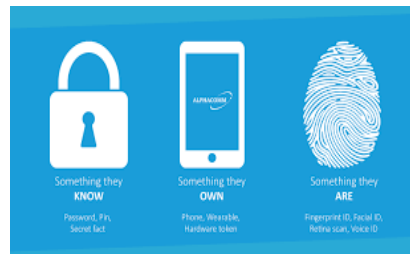


NFC infrastructure in place / customer acceptance accelerating

Contactless spending limit increased in 31 countries

75% of all Mastercard transactions in EU were contactless

### Government Mandates on Payment Process



#### Contactless mandate

All EU payment terminals required to be contactless from 12/19

#### Strong Authentication Required

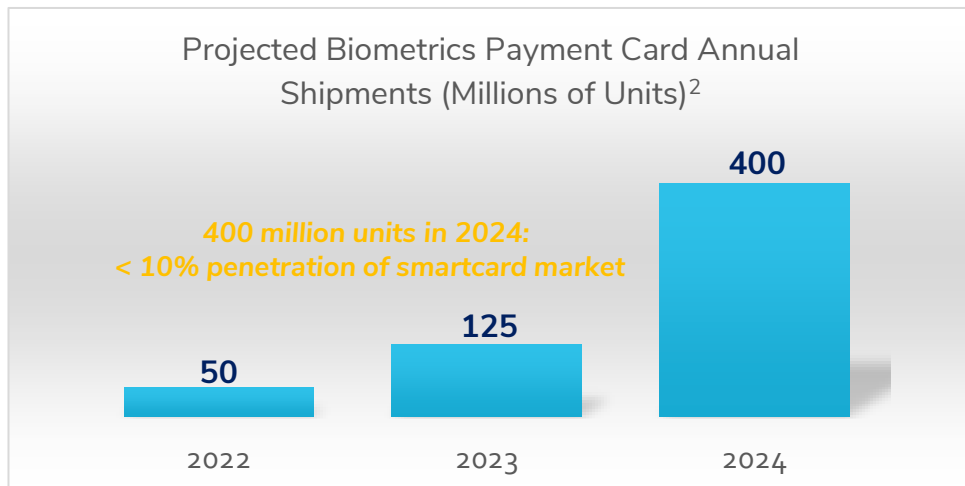
EU mandated; taking effect this year

#### Digital Currency/Electronic Payment

Mandated by China for 1Q 2022

# Payment Cards – 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**



- **Strong growth universally forecast**
- **Contactless cards growing even faster**
  - Pandemic driving public awareness
- **Combining Convenience and Security**
  - Infrastructure already in place
  - Removes contactless \$ limits
  - “Top of wallet” payment device

<sup>(1)</sup> Nilson Report

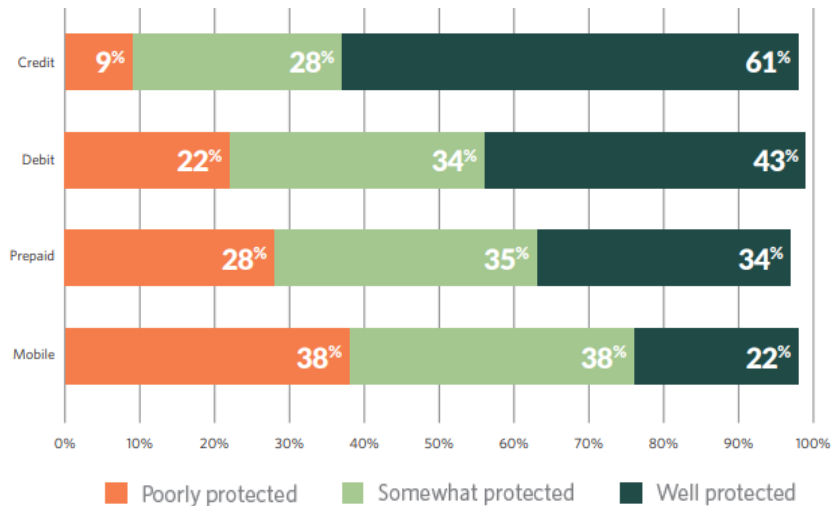
<sup>(2)</sup> Chart based on average of industry analyst estimates excluding highest estimate, 2024 is IDEX estimate.

# Co-Existence of Mobile Payment and Payment Cards

**Trends support biometrically-enabled smartcard uptake**

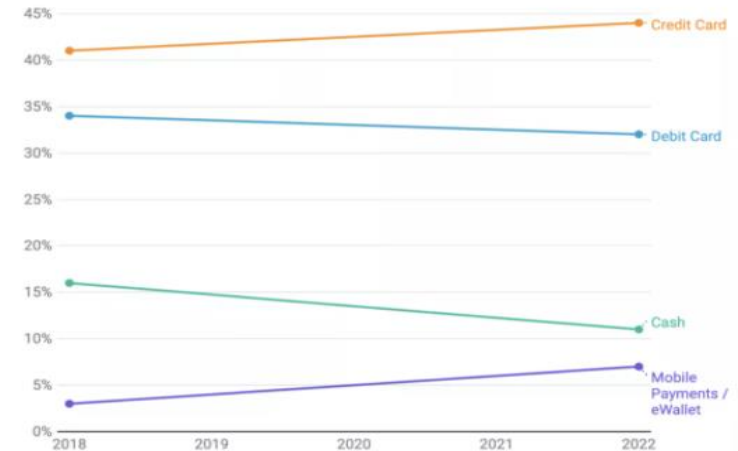
## U.S. Consumers View Cards as Safest Payment Method

Percentage of respondents by payment type<sup>1</sup>



## U.S. Point of Sale Payment Methods Dominated by Cards

Forecast 2018 - 2022<sup>2</sup>



# Biometrics Payment Card Benefits

## CONSUMER



- Eliminates lost/stolen, friendly fraud
- Identity protection
- Fully encrypted
- Peace of mind



- Fast, simple, secure transactions
- Hygienic, “touch-free” payments
- Compatibility with existing POS
- No battery
- No pins, no connectivity issues



- “Cool factor” - Appeal to tech users
- Metal cards especially appealing
- Security for stored value
  - Prepaid cards or Crypto Wallets

## CORE BENEFITS

Increased Security

Convenience

Usage

Status / Prestige

Value-add / Economics

## BANK/ISSUER



Reduces unrecoverable losses from fraud and associated operational costs for chargebacks and investigations



Incremental revenue & share of payments  
*Replacement of cash transactions*



‘Top of Wallet’ effect  
*Preferred use over other cards in wallet*



“Marketability” advantages  
Demand driver for account growth

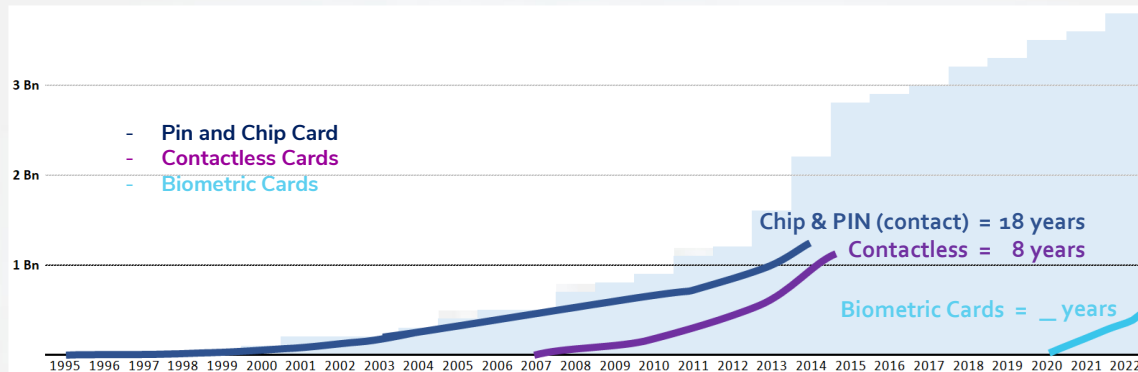


Monetizing the card's value-add

- Enables incremental card/annual fee
- Provides inclusion path for “the unbanked”



# IDEX Commercialization Status



## IDEX Commercialization Status

- TrustedBio shipping to multiple customers
- Production volumes targeted for Q3
- DC/EP initiative in China: Multiple design wins

**FY 2020-2021**

**FY 2022-2024**

**FY 2025 and Beyond**

### Vetting Phase

### Production Volume Ramp

### Broad Market Use

- ✓ Technology Proof of Concept
- ✓ EMVCo<sup>®</sup> Certification
- ✓ Institutions order cards for testing
- ✓ Introduction of IDEX TrustedBio<sup>™</sup> solutions under \$5/card
- ✓ Initial production volume orders

- ✓ “Soft” or “Mass” Commercial launches
- ✓ Significant increase in unit volumes
- ✓ Market penetration of 5-10%
- ✓ Increased availability to global consumers

- ✓ Next-gen features
  - integrated display
  - card not-present solution
- ✓ Broad retail and Fintech adoption
- ✓ Market penetration > 10%
- ✓ Advance toward market saturation



<sup>(1)</sup> Eurosmart, 2000-2018

<sup>(2)</sup> ABI Research, 2019-2022

# Biometric Payment Card Value Chain

IDEX has customer partnerships with 10+ leaders in the payment card ecosystem

Payment Networks / Specification Providers



VISA



RuPay

Biometric Algorithms



Fingerprint Sensors



Card Inlay Providers



Secure Elements



Card Manufacturers



Card Issuers



# IDEX Differentiation



# IDEX TrustedBio™: Proprietary Advantages

*The only fingerprint solution designed for card-based biometric authentication*

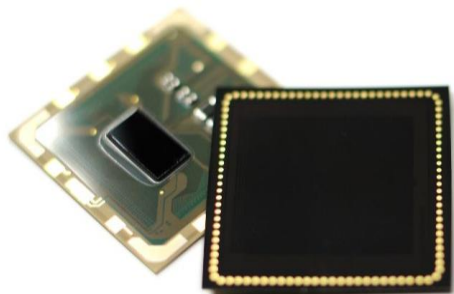
SENSOR & ASIC

+

ALGORITHMS & SOFTWARE

+

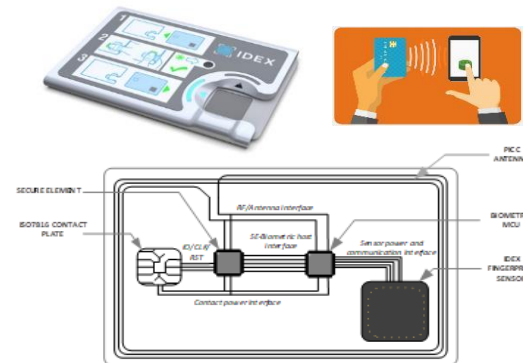
SYSTEMS & SOLUTIONS



Wide-area polymer sensor  
ASIC, integrated package design



Biometric authentication algorithm  
Embedded software for sensor, MCU, SE



Card architecture, reference design  
Enrolment solution, system concepts

*Through software, features are optimized for application requirements and Secure Element architectures*



# IDEX's Optimized Biometric System-on-Chip

*Leveraging the power of Moore's Law*

## IDEX "Off-Chip" BSoC

### Characteristics:

- ✓ **Large sensor area:**  
Maximum image capture
- ✓ **Biometric MCU:**  
Image processing/matching
- ✓ **PMU:**  
Energy harvesting and power management
- ✓ **Reduced silicon area:**  
Lowest possible cost



ASP:

~\$3.50

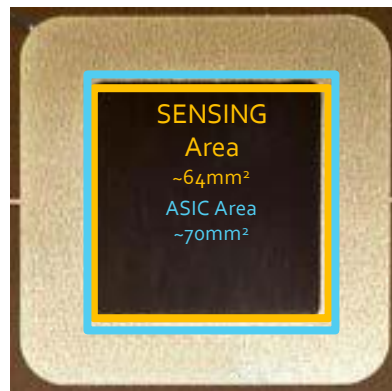
## Competitor Silicon Sensor

### Characteristics:

- ✗ **Limited sensor area:**  
Reduced image capture

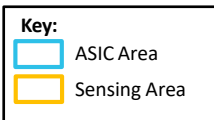
### Additional Costs:

- ✗ MCU
- ✗ PMU
- ✗ Manufacturing complexity



vs.

~\$5.50



Why IDEX / IDBA?



# Strong Operating Leverage in Long-term Model

*Fabless Semiconductor Model: Complete solution including ASIC, Sensor, and Biometric Software*

## Target Operating Model at Scale:

- ✓ **50%+ gross margins**
  - Consistent with fabless model and competitive opportunity
- ✓ **~30% operating margins**
- ✓ **Scalable for sustained cash flow**
  - Concentrated customer base limits channel expenses
  - Fabless model: Low CapEx and Opex



# Investment Highlights

Oslo Børs: **IDEX**   Nasdaq: **IDBA**

- ✓ **Massive addressable market**
  - One of only two suppliers and partnered with the ecosystem leaders
  - The true “pure play” in the contactless card space, with substantial differentiation and defensible IP
- ✓ **Large-scale certification gives us advantage in rapidly changing markets**
  - Certification from two leading payment networks (EMVCo® certified) represents barrier to near-term entry
  - Two certifications from China UnionPay afford head start with DC/EP
- ✓ **Sales and pipeline momentum**
  - Commercial momentum accelerating with issuers and banks for biometric payment cards
  - Multiple new design wins and orders from new integrators and geographies
- ✓ **Opportunities in adjacent markets**
  - Production shipments ongoing to large IT and financial services customer for network access control
  - Volume production orders for both current and next-gen products from customer in Korea
- ✓ **Strengthening position for long-term success**
  - Dual listing achieved on Oslo Børs and Nasdaq
  - Banking industry executives added to the board of directors and strategic advisory committee
  - Recent key leadership hires