

Unlocking Opportunities, Navigating Challenges, and Addressing Security Gaps for Biometrics Payment in Asia Pacific

Nov 2024

Ha Noi, Vietnam

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**Global Senior Manager
Business Development**

Qualcomm



My Career in FinTech & Payments

**First jobs at
P&G, AC
Nielsen**

2014

- P&G – Finance Analyst
- Nielsen – Qualitative Researcher

**5-year journey
at MSB**

2019

- Led the credit card product & AI-based credit score project

**MBA journey in
the US as a
Fulbright scholar**

2021

- Studied and lived in the Silicon Valley

**1st year at
Qualcomm US**

2022

- Helped the company define a new strategy for Fintech vertical

**3rd year at Qualcomm,
a global role based in
Vietnam**

2024

- Leading some key initiatives for Smart retail, Fintech verticals

Customer Sentiment on Experiences and Digital Adoption

- **Convenience, Secure & Trust**

“I want everything fast, seamless, easy and safe when and where I want it”

- **Personalization**

“I want the store or the bank to know me. I want suggestions that fit my needs and hobbies”

- **Entertainment**

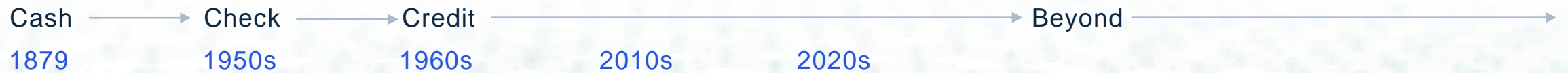
“I want shopping or banking experience to also be fun and memorable”



Payments Modality Evolution



Payment Standards are evolving to enable all devices to become payment devices



Biometrics Payment is A Highly Potential Global Business with Recent Positive Signals in Both Developed and Developing Markets

Biometrics POS Terminal Business

\$29B

Market Size by 2033

12.7%

CAGR from 2023 to 2033

Access Control Business

\$50B

Market size by 2031

12.6%

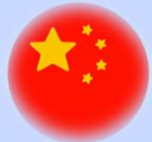
CAGR from 2021 to 2031

Biometrics Device Shipment

202M

From 2024 to 2027

Early Adopters



495M

Number of people used face payment (2021)



2

2 out of top 5 Biometrics vendor are from Japan (NEC, Fujitsu)

Rising Star

amazon

500

Locations with Amazon One Palm payment solution (2023)



CLEAR

50

17M

Number of airports and users enrolled with Clear Me service (2023)

Biometrics adoption for e-gate, border control

Age verification use cases

National ID with biometrics factors (Ex: About 22M registered templates in Vietnam by Aug 2024)

Market Trends



- A shift from face to palm:
 - More privacy friendliness
 - Heavy promotion from Amazon
- All-in-one payment terminal

Biometrics Payment Growth Requires Close Collaboration of Multiple Entities Across Different Sectors



Potential Entities	<ul style="list-style-type: none"> • Chipset: Qualcomm • Sensor: Sunny Optical, Infineon, Pmd Tech • Device: Telpo, Sunmi, NEC, Fujitsu, HSPTek, Wechat Pay 	<ul style="list-style-type: none"> • NCR • Toshiba • ELO • Ingenico • Sunmi • Telpo 	<ul style="list-style-type: none"> • RedRock • Wechat Pay • Iproov • Amazon • FPT • PVComBank 	<ul style="list-style-type: none"> • Clear • Idemia • JP Morgan • VisionBox • FPT • MoMo 	<ul style="list-style-type: none"> • FreedomPay • NPCI • Wechat Pay • PayPal • NAPAS • VNPAY 	<ul style="list-style-type: none"> • JP Morgan • Fiserv • Worldpay • Wechat Pay • NAPAS • VNPAY
	<p style="text-align: center;">← Other Stakeholders →</p>					



Potential Entities	<ul style="list-style-type: none"> • Tata Consultancy Service • Cognizant • Infosys • NashTech • FPT 	<ul style="list-style-type: none"> • Visa • Mastercard • UnionPay • JCB • NAPAS • NPG 	<ul style="list-style-type: none"> • PCI • EMV • ISO • NIST • FIDO 	<ul style="list-style-type: none"> • State Bank • Related Ministries 	<ul style="list-style-type: none"> • Supermarket • Convenience store • Shopping mall • Airport • Stadium • Transit system 	<ul style="list-style-type: none"> • Card holders • Digital wallet owners
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What Does It Take to Grow Biometrics Payment Adoption Growth in Asia?

- Killer use cases
- Ease & trust of use
- Incentives to use

Consumer Adoption



- Well-defined & standardized legal & security framework
- Facilitation programs for early-stage adoption

Regulator Support

Solution & Ecosystem Readiness

- Mature & powerful Software models
- ROI-driven Hardware product & implementation
- Strategic alliances: technology & commercial

Security Enhancement and Standardization Should Be a Top Priority in Biometrics Payment Growth Strategy

The existing popular on-cloud biometrics matching model...



...Contains highly potential risks and attracts various types of attack:

Replay Attacks

Brute Force Attacks

Spoofing Attacks

Sensor Attacks

Man-in-the-Middle Attacks

Masquerade Attacks

Database Attacks

On-SOC based Attacks

So, we need better

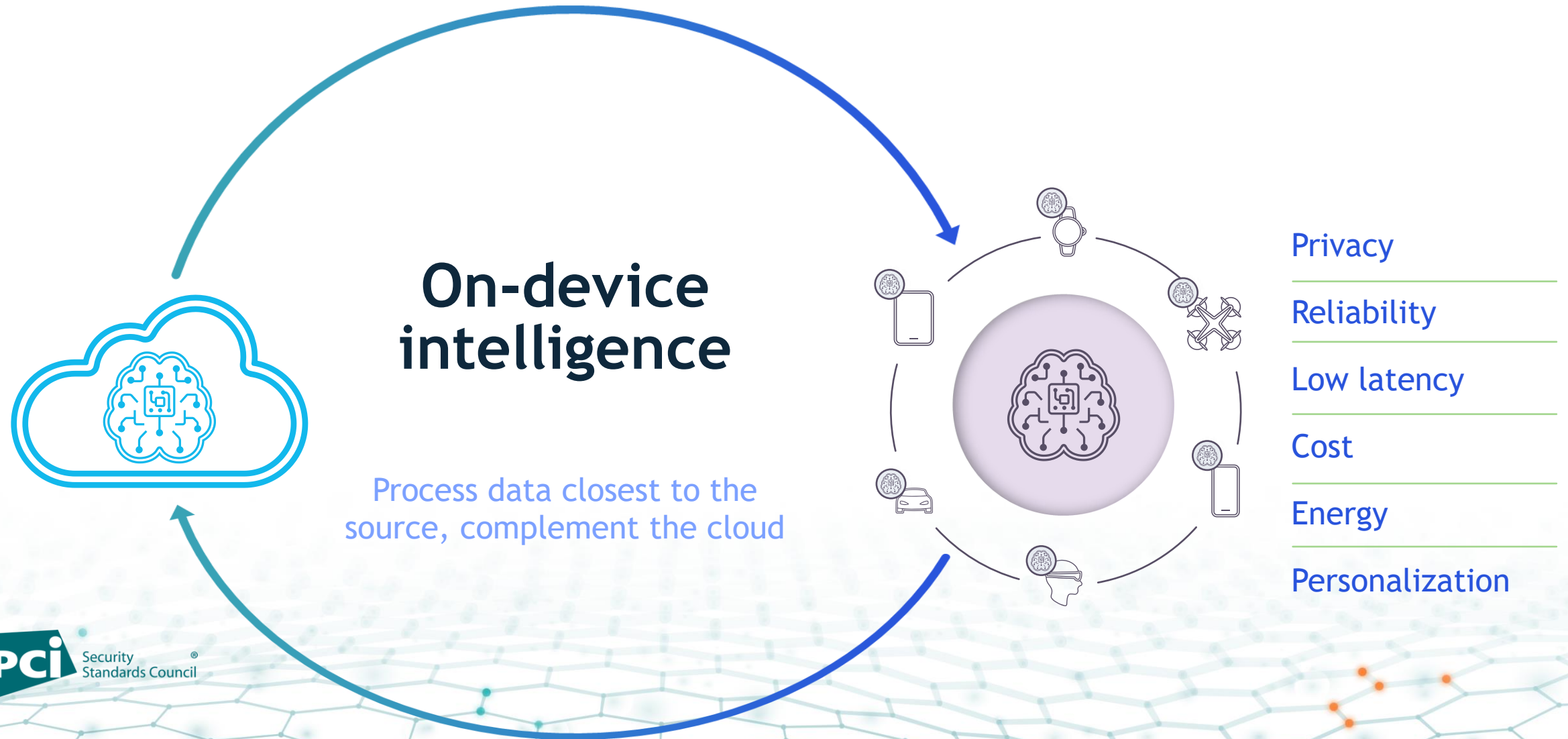
- ✓ **Software model:** Improvement in accuracy, speed, liveness detection, anti-spoofing
- ✓ **Hardware form factor:** Improvement in sensor / camera quality & security, SOC intelligence & performance, product design
- ✓ **Communication Protocol :** How to secure the data in transition from touchpoint to touchpoint

Through enablement and standardization of

- ✓ Tokenization
- ✓ Data Security Framework
- ✓ On-device matching with Edge AI
- ✓ Hardware Security Framework
- ✓ Multi-factor Authentication

Biometrics On-Device Matching with Edge AI Solution

Personalized and Safe Inference

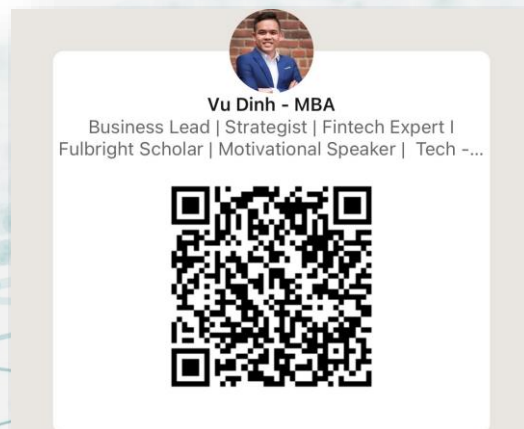


Thank you

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LinkedIn





Security Standards Council[®]