

Digital Security Report – 3 Volume – 2017

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ACTUALS AND FORECAST

Frequency, Time Period

- 5-year annual forecast (2017 - 2021)
- Base year (2016)

Measures

- Installed base
- Unit shipments
- Revenues
- ASPs
- Market shares

Regions covered

- Americas
- Asia
- Europe
- Middle East and Africa
- Individual country splits are presented

VOLUME 1

- **Payment and banking card**
- **Fraud protection in payments**
- **Mobile transactions and proximity payments**

VOLUME 2

- **Mobile point of sale**
- **Mobile transactions and proximity payments**

VOLUME 3

- **SIM / eSIM**
- **Mobile transactions and proximity payments**

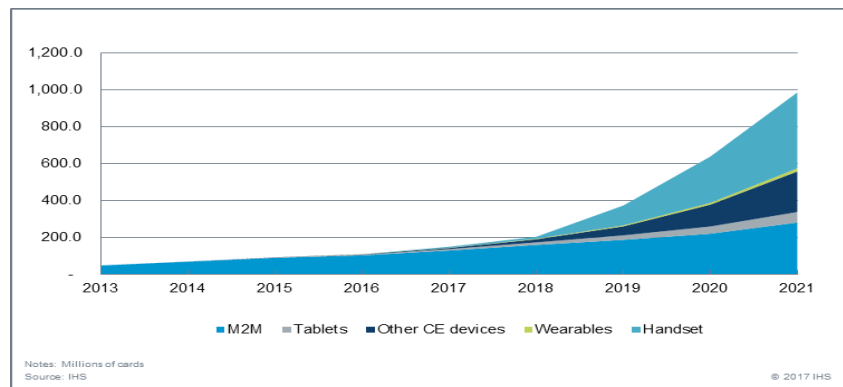
Clients can purchase each of these volumes individually or all of them together depending on their needs

What products and sectors will drive growth in the digital security industry over the next five years?

This three volume report provides coverage in several key areas of the digital security market including coverage on payment and banking cards, fraud protection, mobile transactions and proximity payments, mPOS and SIM / eSIM.

Drivers, restraints and challenges within new areas such as eSIM and fraud protection are analysed and explored. These reports include detailed coverage by product type, country, technologies and market verticals, examining the different opportunities and challenges for each. In addition, market shares of leading suppliers are also presented. The report provides a clear and concise outlook on the market giving vendors and other industry stakeholders crucial insight into the opportunities and dynamics of the market over the forecast period.

Figure 1 – World eSIM shipments, split by device year-to-year



Key Issues Addressed

- The speed with which China, the United States and India will adopt payment and banking smart cards.
- How many phones will incorporate NFC in 2021? Which region will see the highest growth for NFC?
- What is the size of the mPOS market in 2016 and how will it develop in the next 5 years?
- What are the main fraud protection strategies that an organisation can implement?
- How will the eSIM market evolve over the next five years?

Applicable To

- IC Manufacturers
- Smart Card Manufacturers
- Financial Institutions
- Secure Printers
- System Integrators
- Specialists in Card Personalisation
- Manufacturers for Production Equipment for Cards and Readers
- Software Specialists and Application Developers
- MNOs
- IOT product manufacturers
- End-users
- Mobile handset manufacturers

Volume 1

Payment and Banking Card

Executive summary

- Introduction to the payment and banking card market
- Sizing of the payment market
- Cultural preferences and traditional behavior

Top level summary, comparison and analysis of the applications

- Key country analysis: United States of America, China and India

Biometrics in payment cards still niche but has potential

- Advantages and disadvantages of biometrics in payment cards
- Closed loop cards
- Instant issuance by selected countries
- Competitive environment

Conclusions

- 57 individual country splits are presented including: Argentina, Brazil, Canada, Chile, Colombia, Mexico, Paraguay, United States, Uruguay, Venezuela, Rest of Americas, Australia, China, India, Indonesia, Japan, Malaysia, Philippines, South Korea, Taiwan, Thailand, Vietnam, Rest of Asia, Austria, Azerbaijan, Belarus, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Kazakhstan, Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine, Uzbekistan, Rest of Europe, Egypt, Iran, Israel, Kenya, Morocco, Nigeria, Saudi Arabia, South Africa, UAE, Rest of MEA

Fraud protection in payments

Executive summary

- Introduction, sources and methodology, definitions

Regulation and standards affecting the payments market

- PCI PTS
- PSD and PSD2
- General Data Protection Regulation (GDPR)

Identity and access management market

User-authentication market

Authentication method segmentation

- Hardware and software fraud protection solutions
- PAN transaction, tokenization, CSC and CNP, machine learning, 3-D Secure, reliance authentication

Fraud protection in payments (continued)

Trade bodies involved in fraud protection work

- FIDO, GSMA Mobile Connect, Global Platform, ETSI, Trusted Computing Group, OATH, FIPS

Cases studies

- Target Corporation, Home Depot Inc., Nieman Marcus, JP Morgan Chase, Wells Fargo, Bangladesh Bank fraud via SWIFT network

Conclusions

Mobile transactions and proximity payments

Executive summary

- Introduction, scope, definitions and methodology

Market for NFC modems and NFC secure elements

- World NFC modem unit shipments and revenues by device type
- World shipments of NFC-enabled cellular handsets
- NFC-enabled smartphones by OS
- Implementation mode of NFC modems shipped into cellular handsets
- World NFC modem shipments by geographic region
- World NFC secure element unit shipments and revenues by device type
- NFC secure elements by cellular handset type
- Implementation mode of NFC secure elements shipped into cellular handsets
- World NFC secure elements into cellular handsets by geographic region
- NFC SIM card shipments
- NFC-enabled POS terminals
- Vertical markets for NFC

Competitive environment

- Market share estimates for NFC modem and NFC secure element suppliers

Case studies:

- Apple Pay, Android Pay, Samsung Pay, Mi-Pay, Huawei Pay

Host card emulation

Tokenization

Other technologies, including QR codes

- Walmart Pay, Alipay, WeChat

Conclusions

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About IHS Markit

IHS Markit (Nasdaq: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 key business and government customers, including 85 percent of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.

Volume 2

Mobile point of sale

Executive summary

- Introduction, scope, definitions and methodology

mPOS market overview and complexities

- Global market forecasts
- Top-level trends
- Trends in solution type (magnetic stripe dongles, chip and sign devices and chip and PIN devices)
- mPOS hardware by type of business
- mPOS hardware by mobile operating system compatibility

The American mPOS market:

- Key trends and issues, mPOS solution type, vertical markets, Outlook and assumptions

The Asia-Pacific mPOS market:

- Key trends and issues, mPOS solution type, vertical markets, Outlook and assumptions

The EMEA mPOS market:

- Key trends and issues, mPOS solution type, vertical markets, Outlook and assumptions

Other technology trends

- New smart android payment terminals

Regulations and standards impacting the mPOS market

- PCI PTS
- PSD2

Competitive environment –

- Market share estimates
- Impact on traditional POS market
- mPOS suppliers and their products

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VOLUME 3

LEAD ANALYST

Don Tait – Senior Analyst Analyst, Digital Security

Don Tait is an IHS market analyst specializing in digital security area.

Don brings over eighteen years of market research experience to his role as senior analyst within the Digital Security Group. He specialises in the areas of payment and banking cards, fraud protection, SIM/eSIM cards, NFC, smart cards, mPOS and contactless credentials.

Don has presented findings from his reports at many events around the world. He has also written a number of feature articles for leading journals and publications. Don is based in the company's Wellingborough, UK office and may be contacted at don.tait@ihsmarkit.com

ABOUT IHS TECHNOLOGY DIGITAL SECURITY COVERAGE

Our coverage of digital security technology is built on the foundation of IHS Inc.'s deep background in smart technology and security, and the acquisition of IMS Research, who has a 21 year history covering smart credentials.

The packaged 3 volume report includes digital security coverage including: SIM/eSIM, near field and proximity payments, fraud protection in payments, mPOS, and payment cards. Taken together, they offer deep insight into suppliers at different points of the supply chain, market data and forecasts, and different technologies within the industry. The digital security coverage comes with in depth access to our analysts and leverages IHS Markit's global capabilities and is complemented by adjacent research areas. Dedicated research teams including (semiconductors, mobile, wearables, access control, M2M, IOT and teardowns).

Volume 3

SIM / eSIM

Executive summary

- Introduction to the SIM market
- Definitions of SIM cards

Sizing of SIM card market

- Top-level market summary, comparison and analysis
- Embedded SIM (eSIM) and removable SIM summary
- Embedded SIM summary
- Embedded SIMs (eSIMs) in a different market sectors
- Companion devices helping drive shipment volumes
- Handset SIM summary
- When will one of the "top three" smartphone manufacturers incorporate eSIM in a handset?
- Key developments within the SIM card market
- Form factor trends – quicker trend towards 4FF and triple SIM
- MFF2 shipments continuing to grow
- ASP trends
- Sales-channel dynamics
- NFC SIM still has a future
- Trusted service manager offerings help boost revenues
- Replacement rates remain steady

GSMA RSP (Remote SIM Provisioning) Specifications

- New ecosystem and evolving business model
- SIM provisioning with the traditional SIM card
- eSIM provisioning in the future

Stakeholder analysis:

- MNO, SIM supplier, End-user, business customer, M2M OEM, OEM manufacturers, new entrants, IoT

Market share developments in 2015 and 2016

Conclusions

Mobile transactions and proximity payments

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