디지털 트랜스포메이션을 통한
비즈니스 혁신과 4차 산업혁명 대응을 위한

GIT 솔루션즈 데이

생체인증 동향 그리고...

2018.10 / ㈜시큐어가드테크놀러지 이동균

APPM
Secure Guard Technology Inc.

GIT 굿모닝아이텍(주)

목차

The Problem

2018 Data Breach Investigations Report

Research report

11th edition

Top 20 action varieties in breaches

Use of stolen credentials (hacking)
399

RAM scraper (malware)
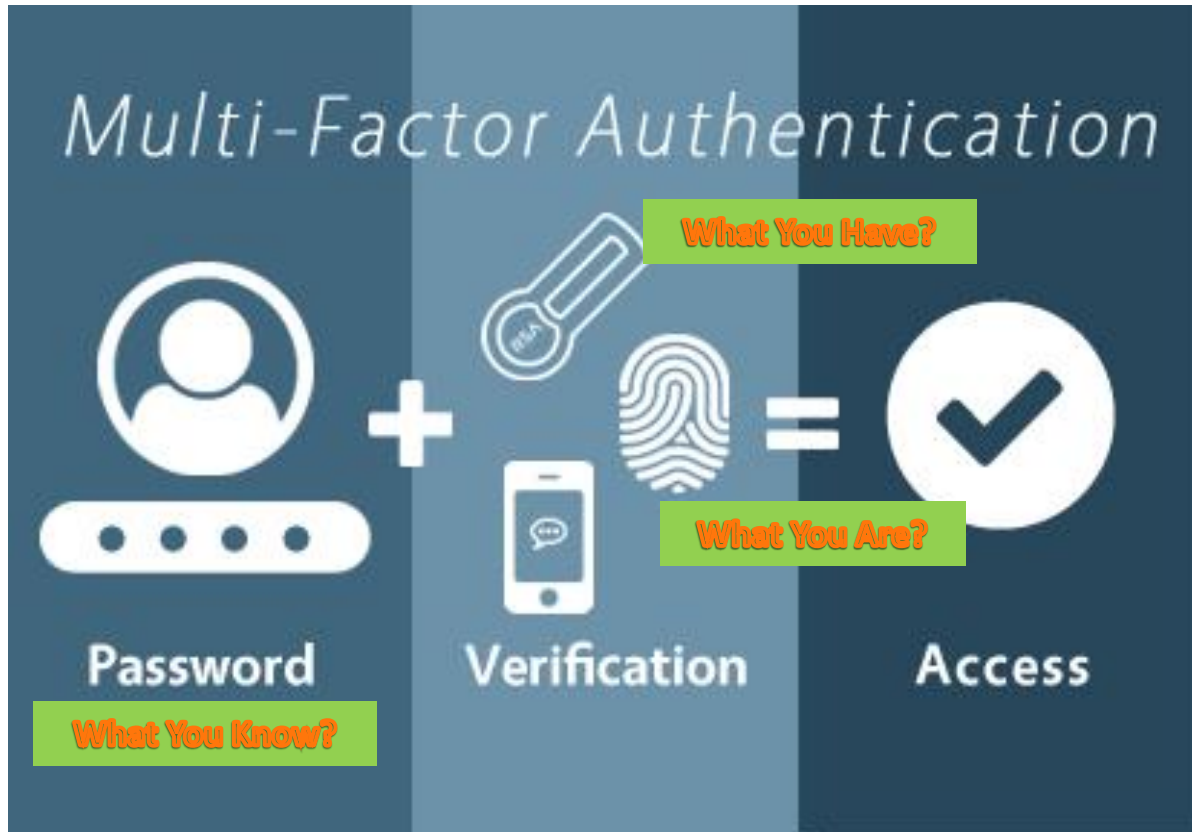312

Phishing (social)
236

Privilege abuse (misuse)
201

APPM
Secure Guard Technology Inc.

WE NEED
NEW MODEL

The Problem

WE CALL
BIO LOGIN
Windows OS/Applications

세상의 모든 IT 기기를
BIO LOGIN하자

APPM
Secure Guard Technology Inc.

The Solutions

Shapes:

ARCH **WHORL** **LOOP**
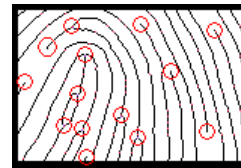
Minutiae:

END **BIFURCATION** **ISLAND** **LAKE** **DOT**

unique arrangement of minutiae for different people

False acceptance rate <0.001~0.01
False rejection rate <0.1~0.5

- ◆ Non-intrusive, Reliable, Inexpensive
- ◆ Semiconductor or Optical
- ◆ Useful mostly for verification and less for identification
- ◆ US stores experimented with payment by fingerprint…

The Solutions

- Controlled scene – access control
  - Frontal view, similar distance, reasonable lighting
  - Compare live image to an original, captured in similar environment
  - Usually for verification purposes, with another ID

- Algorithms extract features, and compare relative positions of eyes, nose, and mouth, nose width, and other factors

- Relatively user-friendly

- Not very accurate, and requires frequent updates

False acceptance rate <1~1.3
False rejection rate <1~2.6

- Very difficult in a random scene – street, airports
  - Much more difficult
  - Law enforcement applications

APPM
Secure Guard Technology Inc.

The Solutions

- Vein patterns are unique to an individual (even twins)

- Scanned with infrared rays, using reflective photography

- False acceptance rate <0.00008~0.0001

- False rejection rate <0.01~0.1


PalmSecure (Fujitsu)

FingerVein (Hitachi)

The Solutions

- Human eye encodes 3.4bits/sqmm
- Extremely accurate: chance of duplication (including twins) $< 10^{-72}$
- Fast comparison: Identification takes 2sec per 100,000 people in DB
- Sub-$1000 systems are available, but expensive to enroll many
- Considered a little intrusive / dangerous by some people
- Growing in market share vs. other solutions (patents expired)
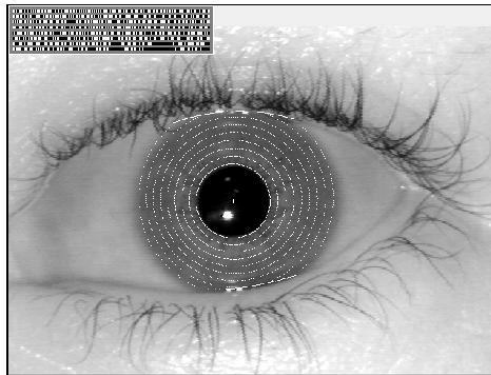
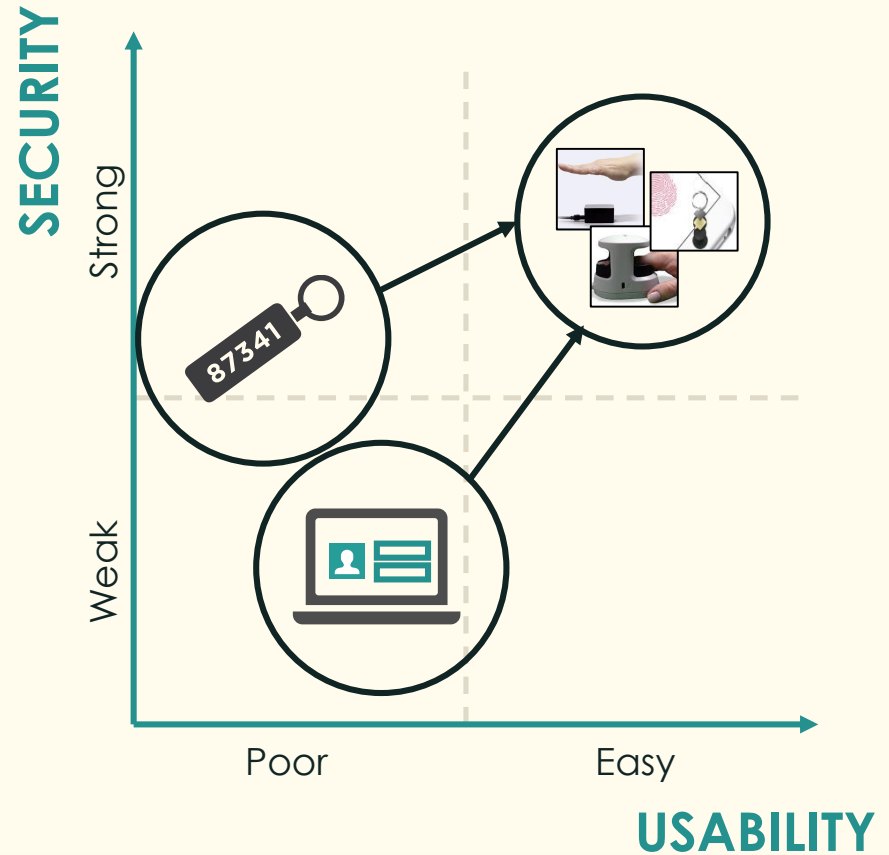**False acceptance rate <0.00083~0.0001**
False rejection rate <0.0001~0.1

THE OLD PARADIGM

SECURITY   **USABILITY**

The Solutions

THE NEW PARADIGM

SECURITY

Strong

Weak

87341

Poor

Easy

USABILITY

The Solutions

Password LOGIN

① Authentication Challenge
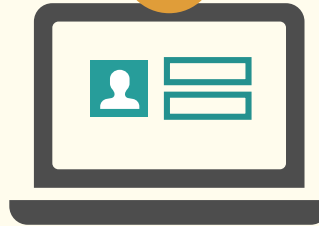
② ID/Password Verification

③ Authenticated Online

BIO LOGIN

① Authentication Challenge

② Touch BIO Devices

③ Authenticated Online

APPM
Secure Guard Technology Inc.

The Solutions

PC Bio Login

1 Windows Login Screen

Request Verification →

2 BIO Verification

Login O/S →

3 Registration Complete

APPM
Secure Guard Technology Inc.
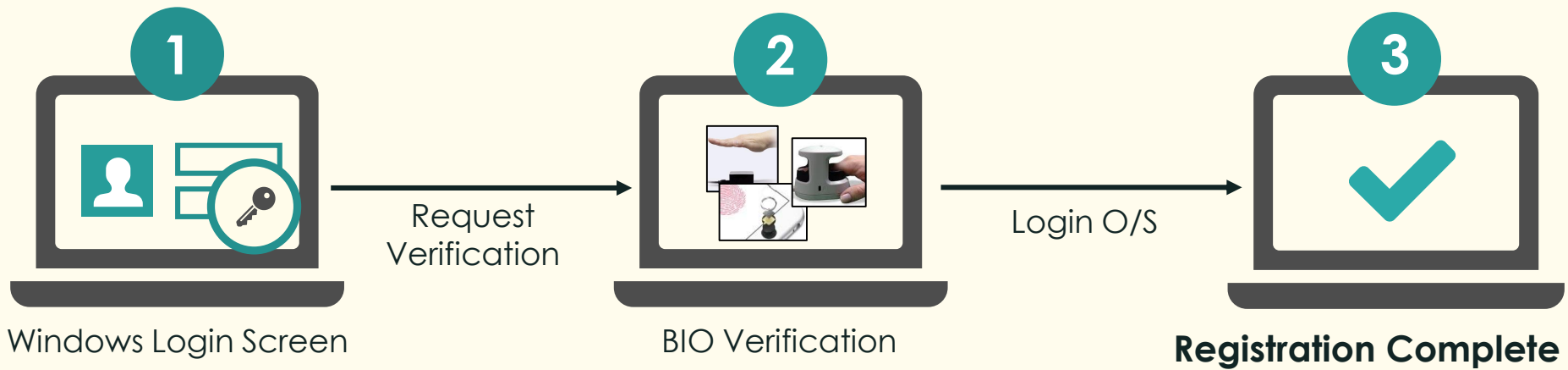
The Solutions

Application/Server Bio Login

1 Application/Server Login Screen

Request Verification →

2 BIO Verification

Login Application →

3 **Registration Complete**

APPM
Secure Guard Technology Inc.

The APPM for ESSO

The APPM for ESSO

The APPM for ESSO

GIT 솔루션즈 데이

감사합니다.