



## Identity in the Internet of Things

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## Why Authentication?

## "I'm Shawn, and here is my proof"

### **IDENTITY**



### **AUTHENTICATION**



## Authentication is the process by which we establish TRUST



## Why Authentication?



## **Primitive Authentication**









### Something you HAVE



**HISTORY** 





### Something you KNOW

### Something you ARE



## (Less) Primitive Authentication









### Something you HAVE



TODAY





### Something you KNOW

### Something you ARE



## The Authentication Dilemma

## Security vs Convenience





TODAY





















# The Nymi Band



### CONTINUOUS

Log-in once, remain authenticated until you decide to remove the band

### **PROXIMITY-BASED**

Can set how close to a device you need to be to (de)authenticate





#### HOW WE DO IT





### BIOMETRIC AUTHENTICATION

HeartID is the most difficult biometric to spoof



## Hardware

### Convenience in a wearable form factor: confirm once and use all day

### **SECURITY**

Secure element with serialized chip; foundation of cryptography

### CONVENIENCE

Battery life optimized for continuous communication



HOW WE DO IT

#### PERSISTENCE

Ability to read ECG reliably with dry electrodes

### PERSISTENCE AND SECURITY

Detection: remain authenticated until you decide to remove the band



## **Transactional Authentication**



**AUTHENTICATION** 





TODAY

### Trust











#### TOMORROW







# **Contactless Payments**

### CASE STUDY HIGHLIGHTS

- Nymi Band with NFC offers Secure, Continuous Authentication
- MasterCard credentials stored in the Nymi Band in secure hardware element
- Uses merchant's existing tap & pay infrastructure
  - Payment can only be made once Nymi Band has been activated via HeartID



USE CASE







# Personalized Experiences

### CASE STUDY HIGHLIGHTS

- Shop for clothes from home and pre-select merchandise online
- Make appointment to try on at your chosen location
- Try on in-store and bypass traditional brick & mortal sales path
- Pay with your Nymi Band and leave the store



USE CASE





## You Can Change your password but you can't change your heartbeat



BIOMETRICS





\* \* \* \*

I would be interested in an alternative to usernames and passwords to protect my security on the internet

77%

Source: 2015 Accenture Digital Consumer Survey



#### **PASSWORDS**?

## The Need For Change



In the next 12 months, I am interested in using a uniquely encoded chip in my phone or computer to protect my security and privacy on the internet

In the next 12 months, I am interested in using biometrics (recognition of my voice, retina, or fingerprint) to protect my security and privacy on the internet

I am aware of one or several alternatives to usernames and passwords to protect my security and privacy on the internet





## **Permissions** Convenience Passwords Trust Devices Security Credentials Wearables Signatures Data Personal Presence Breaches Payments Data Access Tokens Privacy Webrooming Systems Cloud Geo-Presence **SSO Biometrics SAAS** largeting Personalization





### It's Shawn





## THANKS!



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