

The Human Touch: Biometrics Yesterday, Today and Tomorrow

For thousands of years, humanity has used fingers to express itself. Crossing one's index and middle fingers in the West means good luck, India's intricate hand mudras indicate everything from no fear to reverence, and a thumb down signalled bad news for Rome's gladiators.

Today, however, we're doing even more with our fingers. From accessing mobile devices to authorizing payments, the use of fingers - in particular, our fingerprints - has grown rapidly.

So rapidly in fact that in May 2019, we announced that we had shipped [1 billion fingerprint sensors](#) worldwide. But how did we get here, and where do we go next?

Authentication is dead, long live authentication

It's a funny coincidence 'PIN' and 'pain' are only one letter apart. For years, PIN authentication has been to the tune of "oh what's my number," often followed by "wait - I'm sure this is right," and occasionally, "forget it!" This was bad for consumers, OEMs and merchants alike.

Then came an alternative. Something you can't forget and that's with you wherever you go.

While many think of fingerprint authentication as a recent phenomenon, they are somewhat mistaken. Since the creation of the first fingerprint sensor prototype for mobile in 1998, innovation has continued well into the 21st century. Sensors got smaller, smarter, and authentication was integrated into the device's secure element to pave the way for mobile payments. In 2014, Fingerprints helped launch the world's first Android smartphone with a touch fingerprint sensor, before releasing the first home button touch sensor for Android in the same year.

Now commonplace in mobile devices, the technology's ongoing advancement and adoption has simplified the everyday lives of consumers, all over the world. [We've even done the maths](#). Unlocking smartphones with fingerprint sensors rather than a PIN saves us an average of 41 minutes a week: that's nearly 3 hours a month, 36 hours a year, and a staggering two weeks in a decade!

A tactile today

The success of biometrics in the mobile world has paved the way for exciting, next-generation applications across new verticals – from access control to payments, the applications are endless.

Answering the age-old security dilemma of balancing security with convenience, [its unsurprising we've seen the payments world take to biometrics](#). Earlier this year, we launched the first [Biometric Software Platform tailored for payments](#) and received [the world's first volume order of fingerprint sensors for contactless payment cards from Gemalto](#). With several contactless biometric payment card trials going on around the globe, we predict this form factor to be the first of many to reach consumers and transform their financial lives.

Innovation in other verticals hasn't meant the end for further R&D in mobile biometrics, though. In a bid for greater design freedom and consumer convenience, there's increasing demand for in-display fingerprint sensors. Allowing consumers to simply 'touch' and authenticate directly on the display of the phone, we expect this to be [one mobile innovation that really takes off](#).

Hand-eye coordination

Biometrics technologies beyond fingerprint sensors are also set to grow in adoption. In fact, we're increasingly likely to see solutions combining multiple biometrics technologies as a means to 'layer' security, continue to improve UX, and perhaps finally say goodbye to PINs and passwords!

Take, for example, [our 'touchless' smartphone solution](#). Combining advanced iris and face recognition software with simple, inexpensive and easy to integrate camera reference hardware has created the world's most secure, compelling touchless recognition solution.

The future, you can almost touch it

Fingerprints may have reached the mighty 1 billion milestone, but this is just the beginning.

With the growing trend of previously non-connected devices entering the IoT, manufacturers are looking for new trusted methods of user authentication. Biometrics will play a central role in providing that trust.

A secure and seamless universe is on the horizon. From suitcases and door locks, to cars and homes – biometrics technology is enabling an exciting future, where you are the key to everything.