

A large, stylized fingerprint graphic in red and blue lines, positioned on the left side of the slide. It is partially overlaid by a grey face icon.

Bianca Hogan

Face ID vs Touch ID

Is this the best security?



Touch ID vs Face ID

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The advanced technology of fingerprint and facial recognition has revolutionised the way we secure our phones and protect our privacy. Apple's Touch and Face ID introduced the world to a new era of security on smartphones, in which your fingerprint or facial recognition allows unlocking your phone easy and accessible. The main intention behind Touch and Face ID is to protect against spoofing by masks or fake fingerprints, or other techniques. Take a look through the research conducted to put the comparison to bed.

Touch ID was co-founded by Scott Moody, a co-founder of AuthenTec, a mobile and network security company, who looked at it as, "how do we enhance their privacy?". Touch ID can read multiple fingerprints in 360-degrees of orientation, says Apple, and creates a mathematical representation of your fingerprint then compares it to your fingerprint 'ID' to identify a match.

Critics have stated their concerns upon the initial release of Touch ID on the iPhone 5S, that Apple would use the fingerprints



in their database. Co-founder Moody insisted Apple would "do the right thing" in an interview from the Triangle Business Journal, with Senior Staff Writer, Lauren Ohnesorge in 2013.

The Touch ID advanced technology is stated to be made from sapphire crystal, one of the clearest, hardest materials available which protects the sensor and acts as a lens to precisely focus it on your finger. With a steel ring around the outside of the 'lens', the iPhone or iPad is able to detect when you place your finger on the button and starts reading your fingerprint.

In the research conducted, Apple has insisted that the security of Touch ID is invulnerable, stating, the probability that even a small section of two separate fingerprints that are alike to register as a match for Touch ID is rare, 1 in 50,000.

Face ID was first introduced to the world on September 12, 2017, as a replacement of Touch ID starting on the iPhone X. Using a TrueDepth camera, Apple's Face ID

projects and analyses over 30,00 invisible dots to create a precise depth map of your face, confirming your identity. Face ID even adapts to significant changes in your appearances, such as beards, hats, scarves, glasses, contact lenses and different sunglasses, and is also designed to operate indoors, outdoors and in total darkness.

Critics have stated that whilst Face ID may appear easier and more effective than Touch ID, in a demonstration of speed, Face ID takes approx. 0.5s longer and is critically considered an extra step, as after your face has been recognised, you then must swipe up to open up to the home screen.

The advanced technology of Face ID is stated to revolutionise authentication by using facial recognition, where the TrueDepth camera system accurately maps the geometry of your face. With a simple glance, your phone is securely unlocked.

In the researched conducted, Apple states that security is important to all of us to protect information on our devices and that

they have done some important things to safeguard your information in the same way they did with Touch ID. It is secure enough that the probability of a random person unlocking your iPhone with Face ID is 1 in 1,000,000. And as an extra barrier of protection on your privacy, Face ID only allows five unsuccessful match attempts before asking for a passcode.

A part of the research conducted, Touch ID seems to be more secure and effective in the perspective of the speed of unlocking your iPhone and to make payments, although when the timing of unlocking was compared to Face ID, it was not much of a time difference, approx. 0.5s. But, testing the speed of the two creates a complication, in which Face ID is considered an extra step when unlocking your iPhone.



References:

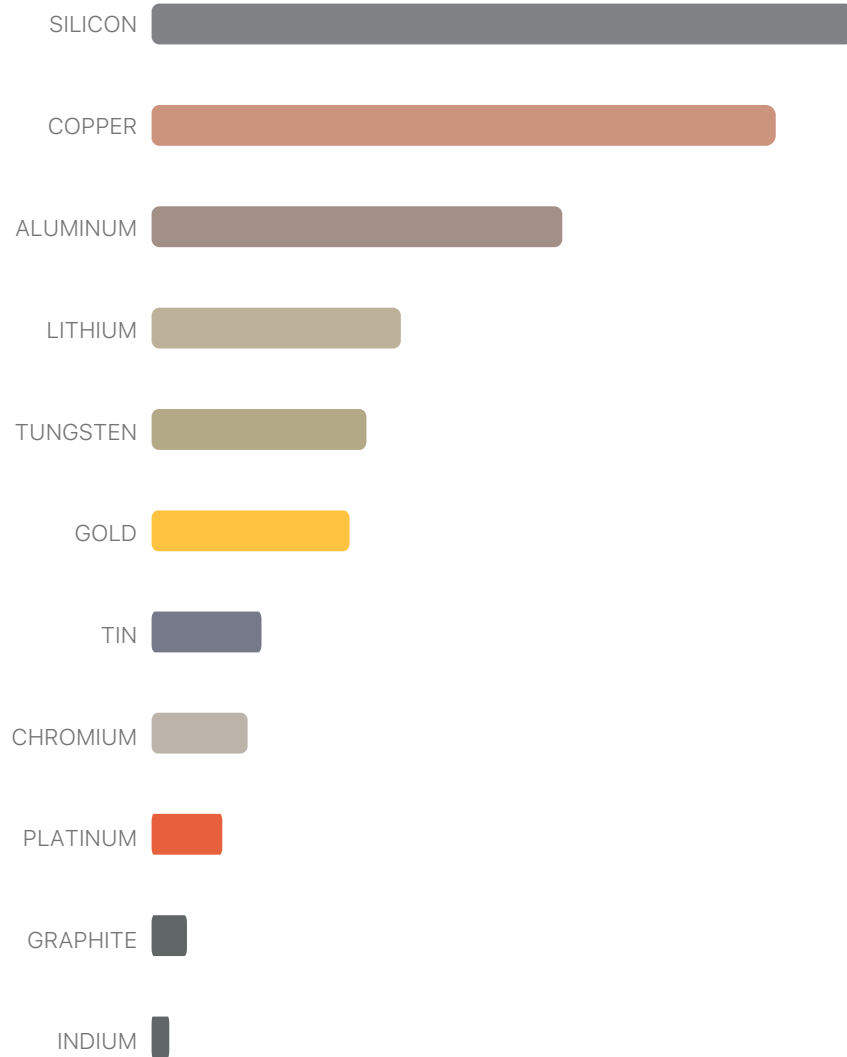
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[face-id-vs-touch-id/?amp=1](#)

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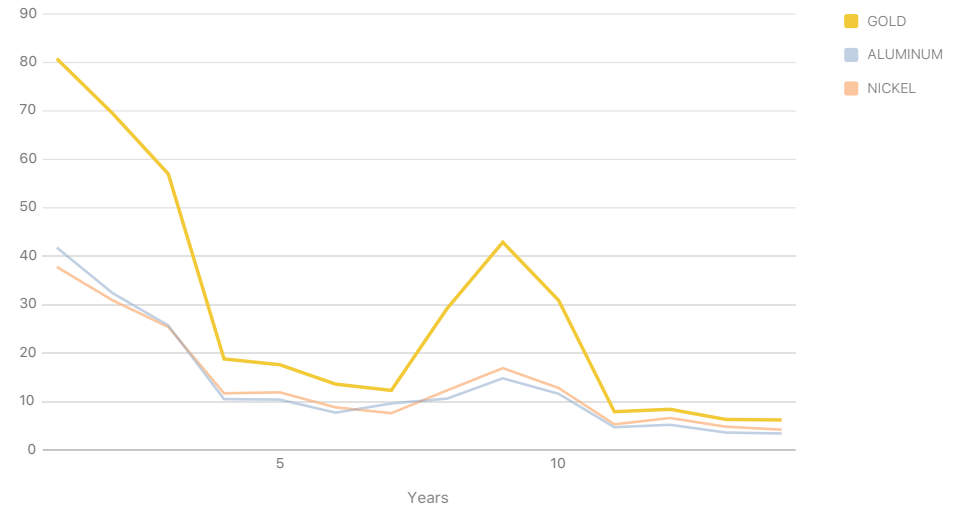
Main Minerals found in iPhone (of 62 total)

% Proportional



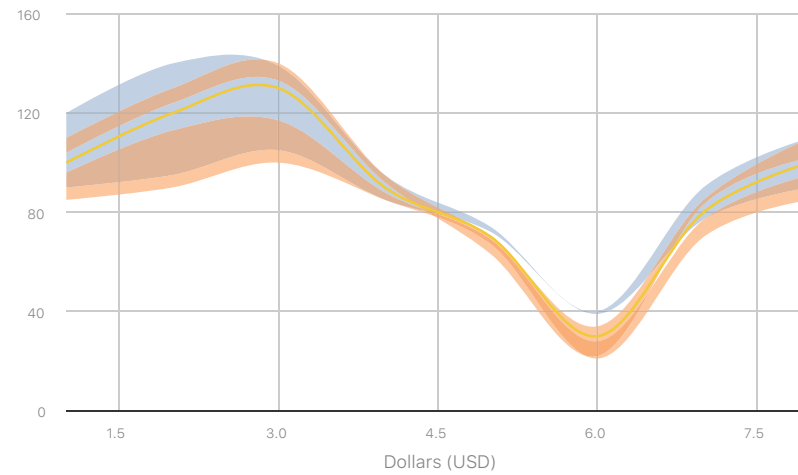
Rate of Mining since the Introduction of the iPhone

in millions of dollars (USD)



Wages Relative to Cost per Kilo Mined

In dollars (USD)



Evolution of the iPhone 6

2004

As part of this of the iPhone used a strategy of planned obsolescence, resulting in a shorter life.

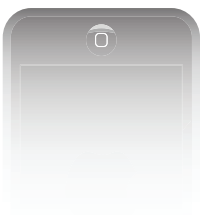
1



2007

As part of this research it has been found that Apple's design of the iPhone.

3



2012

As part of this research it has been found that Apple's

5



2

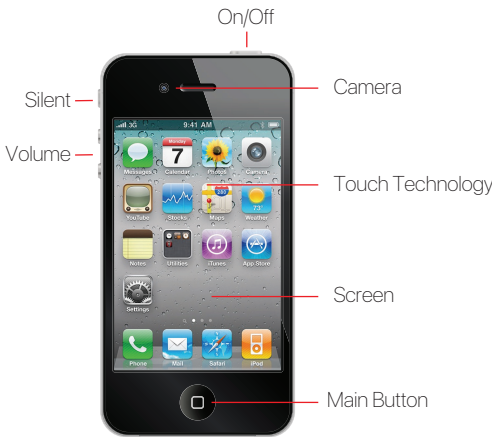
2013

As part of this research it has been found that Apple's design of the iPhone used , resulting in a shorter life.

4

2009

Apple's design of the iPhone used a strategy of planned obsolescence, resulting in a shorter life.

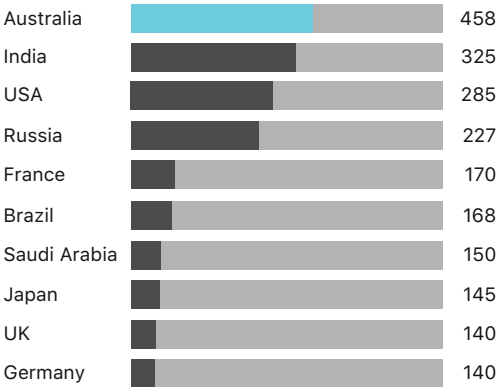


iPhone 4

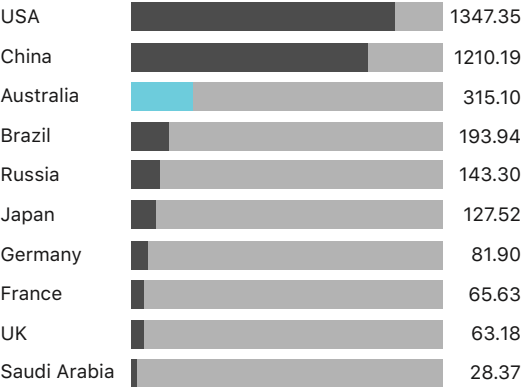
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Volume of Sales of the iPhone

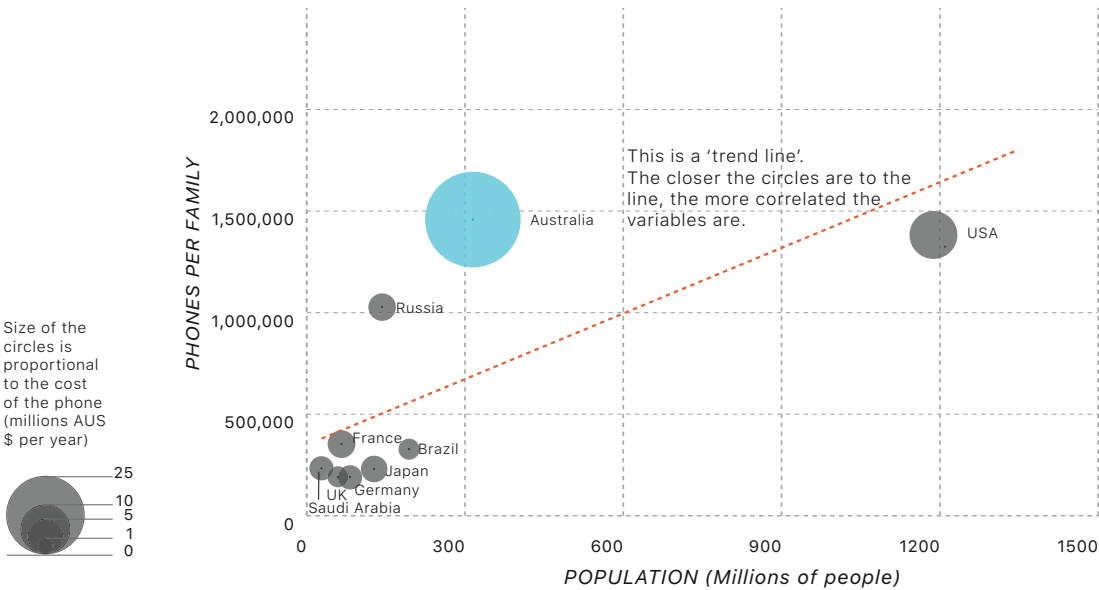
AVERAGE PRICE
(Australian Dollars)



SALES WORDWIDE
(Millions of sales)



Sources: SIPRI Military Expenditure Database, Wikipedia, Bonn International Center for Conversion (BICC), World Debt Clock



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