[When do you think we will replace passwords?](#)

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In the autumn of 2012, not long after I founded iProov, an extraordinary article appeared in wired magazine written by Matt Hoan. In which he described the consequences to his life of having had his password compromised and his entire digital life stolen. It was devastating and it took him a long time to untangle the dreadful mess.

It was obvious at that time that the password had had its day and that we were on the very verge of a glorious new passwordless future. As I say this, we are nearly 10 years on and passwordless has not really taken over yet.

Why is this? In my experience, technology evolution doesn't occur in a smooth linear fashion. It moves forward in a series of discontinuous jumps driven by crises. I have personal experience of this. In 2008, I was the chairman of the company that I founded. That was the world's largest processor of mobile payments. We were clearing and settling about $500 million a year. Our fraud rates were low and everything looked marvelous.

We'd been doing this for several years and all we could see was a glorious future continuing uninterruptedly ahead of us. But there was a flaw in the cyber security of our systems, which at the beginning of 2008, criminals took advantage of and within a few months millions of people had money stolen from them.

It was unpleasant for them and a deeply shaming experience for me. And when we investigated our systems, we understood the flaw that lay at the heart of this weakness that had been there for five years, but only at that moment of crisis became apparent. And only at that moment of crisis, did we understand the need to address it and to correct it.

In general it is true that cyber security events happen in sudden black Swan processes. And I think that when we look at the future of passwordless and the general acceptance that our whole community has, that the password has had its there needs to be replaced by better approaches by PKI certificates, by cloud based biometrics, by behavioral technologies... that we are on the threshold of that revolution.

But perhaps it's going to take a major crisis. In which perhaps millions of people have their lives disrupted to fully complete that transition.