



VBC New York
May 5th, 2015



VBC New York

Biometrics in e-Government

The Voice Security & Authentication Conference

What is '5 de Mayo' about?

- In the USA
 - Day of Mexico
 - Mexican Independence Day
 - Mexican food & beer
- Ontario, Canada
 - "Cinco de Mayo Street Festival"
- Brisbane, Australia
 - "Annual Mexican Festival"
- There are also celebrations in France, England, Japan, New Zealand and many other places...



Cinco de Mayo performers at the [White House](#)



Cinco de Mayo celebration in [Saint Paul, Minnesota](#)



Cinco de Mayo dancers greeted by U.S. President [George W. Bush](#)

‘5 de Mayo’ really is...

- A local celebration in the State of Puebla, Mexico
- In 1861 the French Army invaded Mexico
- On May 5th, 1862 the Mexican army defeated a much larger French force, being the first defeat ever for the Napoleon III Army
- From 1864 to 1867 Maximilian I ruled Mexico
- Napoleon III intended to use Mexico as a base to help the Confederates
- With some help from the US, the French retreated
- It was the last time a European country invaded a country in the Americas

“The utilization of Information and Communication Technologies (ICT’s), and other web-based technologies to improve and/or enhance on the efficiency and effectiveness of service delivery in the public sector”

- **Income level of a country is a general indicator of economic capacity and progress, which thus influences its e-government development**
 - The absence of these factors hinders the implementation of e-government initiatives
- **National income does not, by itself, guarantee e-government development**

- More than 50% of the world population is poor, according to UN standards
 - 50% live with < \$3/day
- Lack of education and opportunities
- Basic needs
 - Food, Shelter, Clothing, Medical
 - **Identity**
- **The right to be someone**
- Social assistance is sometimes given in cash
- Many of the recipients are elderly or single women, with large families



- The Universal Declaration of Human Rights guarantees that **Everyone should have the right of recognition, everywhere, as a person before the law**
- Now days, that right should include **“Digital Identity”**
- Digital Identity is the sum of all digitally available data about an individual
- Identity problems
 - Identity theft
 - No identity
 - Identity replacement

- 4 billion people do not have an address
- So... They can't get a bank loan, run a business, no voting rights, or even access to utility services
- There are new creative mapping technologies to provide a **legal address**
- Combined with voice biometrics, you can provide a **legal identity to any person, anywhere**
- Huge business opportunities



A what3words diagram of a small corner of London

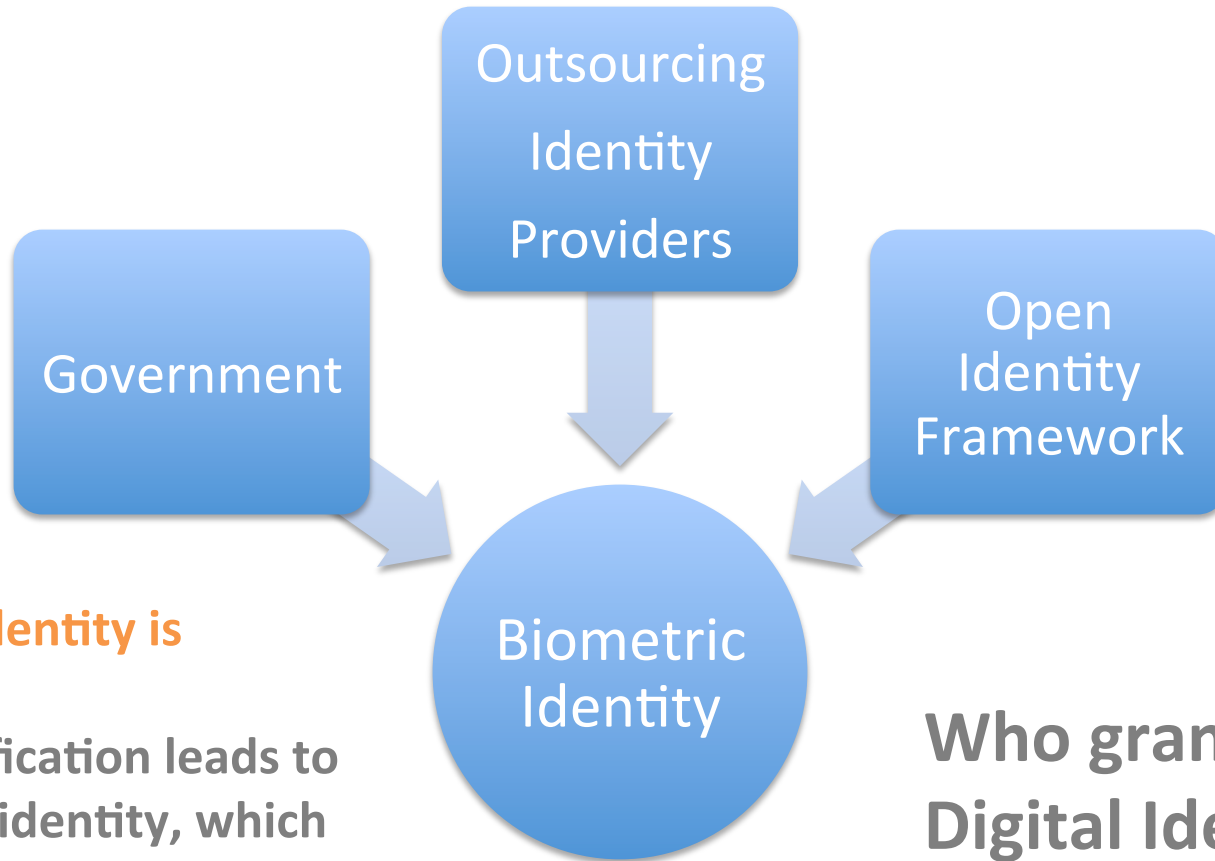
Convenience

Security

E-Government
Identity

Privacy

Trust



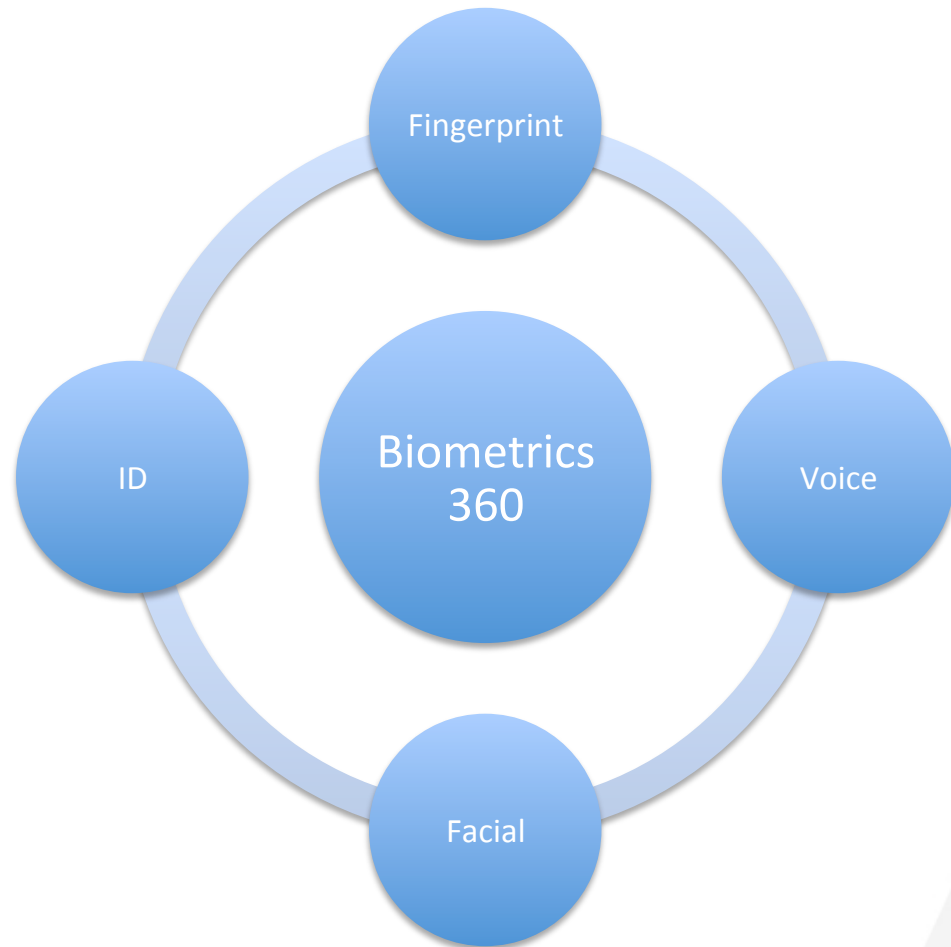
Multifactor identity is needed...

Partial identification leads to unconfirmed identity, which leads to 'partial trust' of who you are...

Who grants Digital Identity?

Problems to deal with...

- Lack of birth and death certificates
- Government, at different levels, trying to lead
 - Local vs Federal Government
 - Politics
 - Control = Budget = Votes
- Similar names
- Address by reference



Field Challenges

- Enrollment and verification needs to be done in rural areas
- Limited telecom and banking services
 - Sometimes services are hours away
- Users sometimes...
 - Don't know how to read or write
 - Or they don't speak the National Language
 - Fingerprints are damaged because of their jobs



Fingerprints



Hacker fakes German minister's fingerprints using photos of her hands

How to steal a fingerprint

Your fingerprint can be stolen by taking a photo

Biometric Identity Theft: Stolen Fingerprints

Fingerprints are getting some bad press... Is voice biometrics next?



Voice Biometrics Option

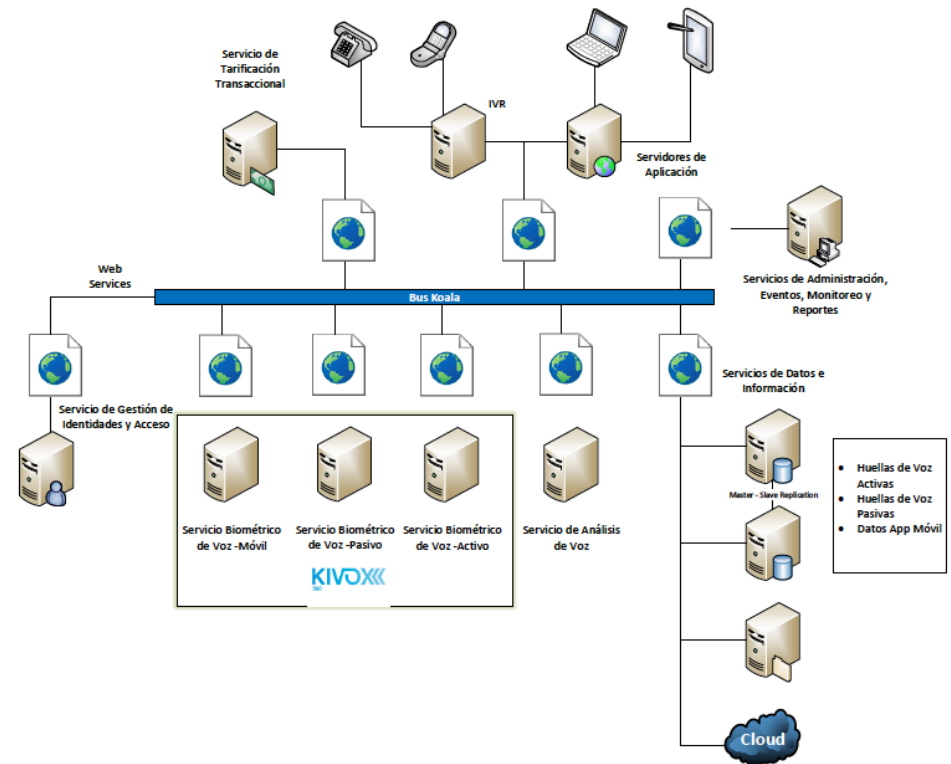
- **Voice biometrics is a good alternative... if properly implemented...**
 - Enrollment
 - Change of speakers
 - Identity theft using recordings at various stages of the process
- **Language independent**
- **Embedded biometric engine**
 - Enrollment and verification process without data network connectivity
 - Voice prints ideally need to be the same everywhere
 - In the cloud system (server based voice biometrics),
 - On the device (tablet, mobile phone voice biometrics)

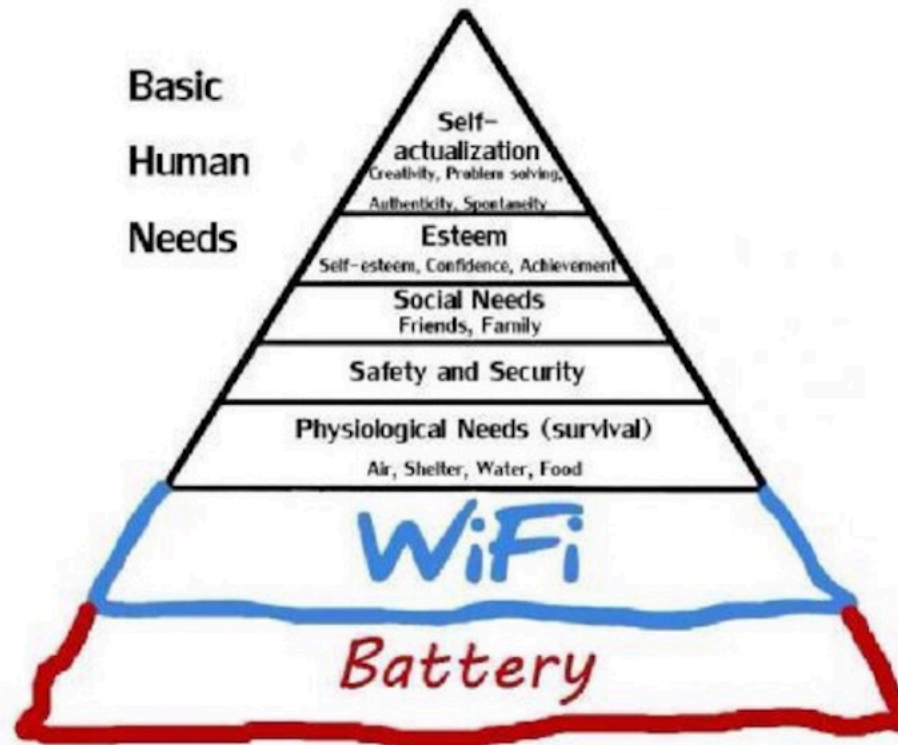


Applications

- Identification of social benefit recipients
- Proof of life verification
- Voting
- Location / presence verification
- Signing of legal documents
- Rural banking services
 - Money transfers
 - Group lending / Microcredits
- Group services
 - Mobile, Internet, TV
- Government Services
 - Utilities

- Cloud based
- Multi-tenant
- Services architecture
- Agnitio voice biometrics
 - Active
 - Passive
- Facial recognition
- Fingerprint
- ASR/TTS
- Other voice services
- Rating
- Encryption





- **Voice biometrics, combined with other technologies, can play a significant role in connecting the poor to the global economy**
- **The right to have a digital identity, and a legal digital address, needs to be framed under the law so this can translate into services and opportunities**
- **Social development plans, and economy inclusion initiatives, need to address the identity issue from a broader perspective**
 - It is not about being in a list to receive a benefit
 - Education, economic development, investment and human rights need to converge
 - It is about being someone, with opportunities and a better future



Thank you!

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