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# The Evidence of Identity (EOI) Approach

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Te Tari Taiwhenua  
Internal Affairs

New Zealand Government

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# At the end of this presentation ....

- Know what 'Evidence of Identity Approach' is and how you might apply it to your own context
- The importance of robust foundational identity to your work
- Biometrics is part of the solution, but not the answer to every identity problem
- How investing in EOI can save money and give your citizens a much better service



# The challenge of identification

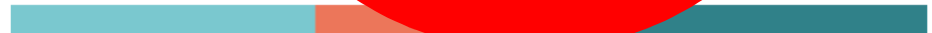
- It is commonly understood that identity fraud facilitates a range of crimes that cause public harm, damage national reputation and have significant financial repercussions
- The risks and impacts of getting things wrong in the Travel Document and Border space means that identity establishment and verification demand attention



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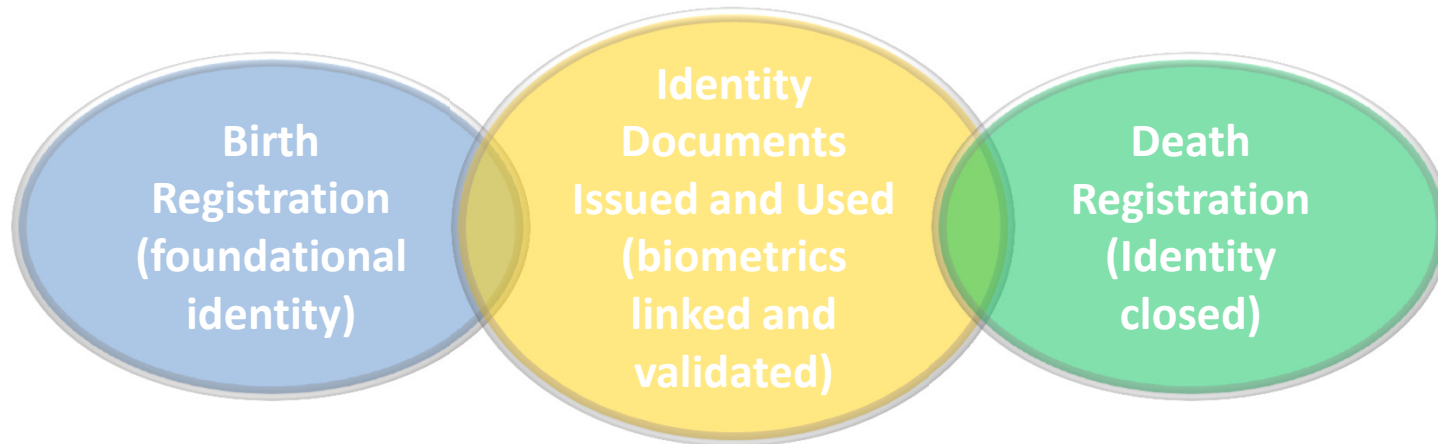
Department of Internal Affairs

# The problem

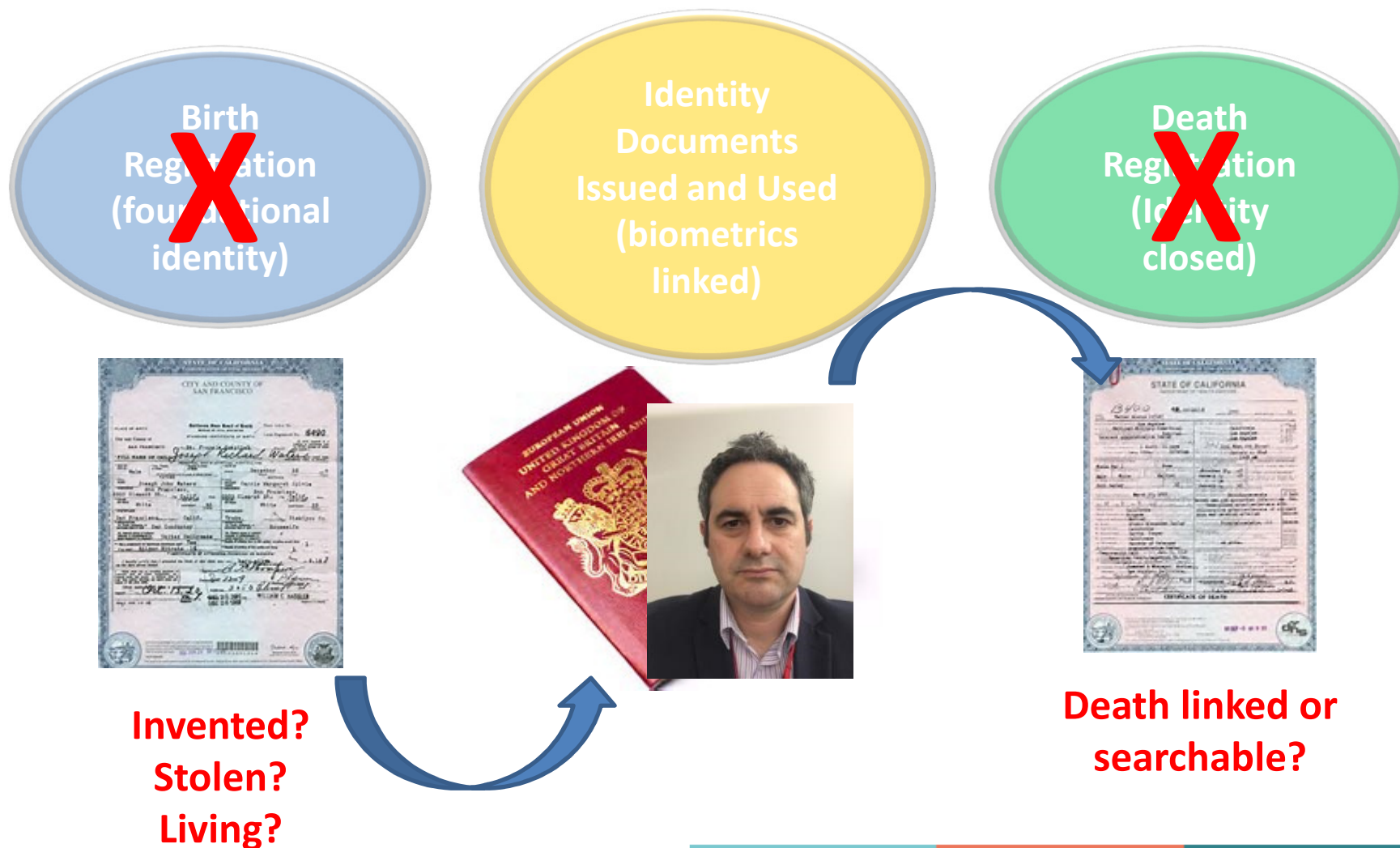
- As the security and integrity of physical travel documents has improved there has been a **move away** from counterfeit passports
- **Weaknesses in passport issuance processes** are increasingly being targeted
- Genuine passports that have been falsely obtained are **much harder to detect** at Border



# Traditional Identity Chain



# Weak Links = system of silos





# *Hold the phone ...* We have biometric matching



# Data clean-up

# Deduplication

# People's aptitude for FR manual comparison

# Multi-modal biometrics



# Human Factors

- Facial Recognition Aptitude
  - All officers evaluated
  - 20% potential 'Super Matchers' (90% or above)
  - 20% of concern (70% or below)
  - Testing is part of recruitment
  - Joined up training with Immigration and Police
- University of New South Wales (Ongoing FR Study)
  - Training makes 5% difference
  - How does this affect recruitment and workforce?
  - Think about exception processing





**Most important aspect  
of any identity system  
... but not the only  
one.**

**Is the biometric  
anchored to a genuine  
biographical identity,  
and does it belong to  
the claimant?**

**Still have Fraud? Yes  
you do.**



# ICAO

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# Global View

- ICAO is looking for uniquely identified travellers across the **global system** to increase security and facilitation
- Requires improved and more **holistic Evidence of Identity processes** from individual Passport Issuance authorities, supported by an integrated border approach
- Requires a different understanding of the identity system, and an **increased understanding** of the role biometrics plays



# EOI Authentication Principles

## Principle 1 - Identity Exists

Objective A - The identity exists (i.e. is not fictitious)

Objective B - The identity is living

## Principle 2 - Applicant links to Identity

Objective C - The presenting person links to the identity

Objective D - The identity is UNIQUE to your system (i.e. only has one claimant)

## Principle 3 - Applicant uses Identity

Objective E - To provide confidence of the presenter's use of the identity in the community

# The EOI approach

- Identity is understood as an **eco-system**
- EOI framework is focussed on understanding and using information to gain a **level of confidence rather than proof – NO ABSOLUTES**
- Establishing and verifying identity is about **probabilities**
- There is **no “silver bullet”** and **no “one-size-fits-all”**



## The EOI approach (2)

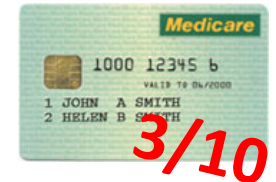
- Identity and identity-related information is broad, covering public and private sector, and **differs between cultures, countries and geographical regions**
- Harnessing information beyond the traditional chain to build confidence over time
- Importance of aspects such as consistency, distributed information, social footprint and connections between information
- Considers **continuity and longevity** of information





# EOI Evaluation

- Evaluation: follow EOI principles to systematically document and understand your **'identity ecosystem'** and key risks
- Analyse ALL potential document, record or information sources available and its value in an EOI process (a matrix is helpful)
- Understand the security of “foundational” records, data and the issuance process that sits behind them
- Identify gaps and look to other areas of EOI to increase confidence ... **THEN design** the approach.



## ICAO Guide on EOI: Example Assessment Table

Table 2:

Principle 3: Presenter uses Identity	C - Applicant links to the identity	Foundational Document	Checks and Measures				Number of checks available
		1: Assertion by a referee	Known by Authority	Matches your database?	Referee trusted by your authority	Matches a trusted group of people	
		2: In-person verification	Self-Supplied Photo ID?	Trusted photo-ID authorities	Are they in the authority's records?	Staff trained in document comparison	
		3: Biometric recognition	Applicant photo database	Other biometrics databases	External authority databases	Historic biometric information	
		4: Interview	Staff trained to conduct interview	Information on applicant sufficient	Enough capacity and infrastructure	Policy on acceptance of evidence	
	D - Sole claimant to unique identity	5: Check authority records	All applications recorded	Staff trained in identifying records	Systems for data matching	Historic records available	
		6: Biometric recognition	Photographs of all applicants	Availability of historic biometrics	Biometric comparisons	Other biometrics stored	
	Additional Evidence						

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# Building On Uniqueness: Key

- Establishing **UNIQUENESS** of an identity in your system is key – without using biometrics (one to many match), this is becoming increasingly challenging
- Building on uniqueness within system – **anchoring to a genuine identity** and building confidence in the presenter's link to the identity by using distributed sources
- New **technologies** emerging that disrupt traditional, and new threats like photo morphing



# Context is important

- There are different risks and mitigations depending on the context

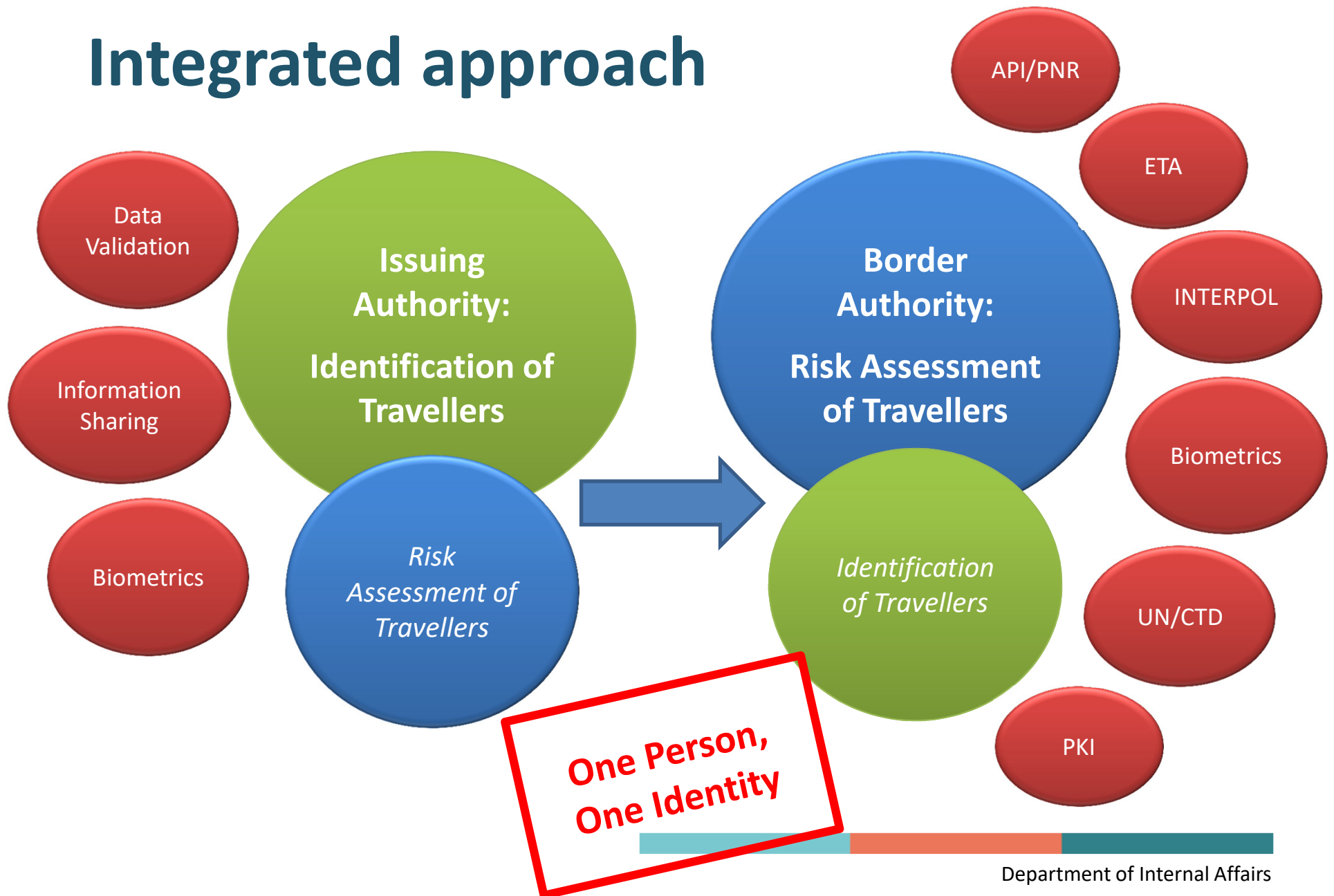
## Passport Issuance Example 1

- Information from village chiefs/elders, educators and employees
- Staff knowledge of local accents, dialects and physical features etc.
- Evidence from other government sources like social services

## Passport Issuance Example 2

- Electronic access to source data from national civil registries
- Centralised database of applications
- Biometrics of every applicant for 1:1/1:M matching
- Large group of trusted witnesses/referee

# Integrated approach



# EOI Guidance Material

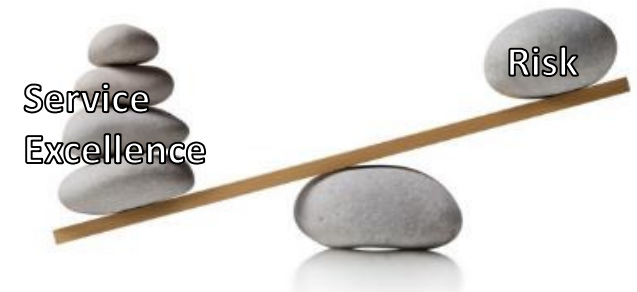
- New Zealand **EOI Standard** (available at [www.dia.govt.nz](http://www.dia.govt.nz))
- ISO/IEC TS 29003:2018 – Identity Proofing
- ICAO Implementation and Capacity Building Working Group (ICBWG) **Guidance on Evidence of Identity**
  - *ICAO Guide on Evidence of Identity*
  - *ICAO Border Management Guide*
- Guidelines on the Legislative Framework for Civil Registration, Vital Statistics and Identity Management (under development)
- ID4Development (ID4D) Technical Guides



ICAO Security and Facilitation

# So what? Why Invest in Foundational ID?

- We all face cost pressures – demand for efficiency gains
- High confidence in EOI and resulting data assets and systems **enables** efficiencies, costs savings and new services
- Robust first-time interaction for travel documents means **subsequent contact can leverage** off initial EOI
- A well-understood EOI approach will enable **more effective targeting of resources** (people and system design)



# Case Study: New Zealand

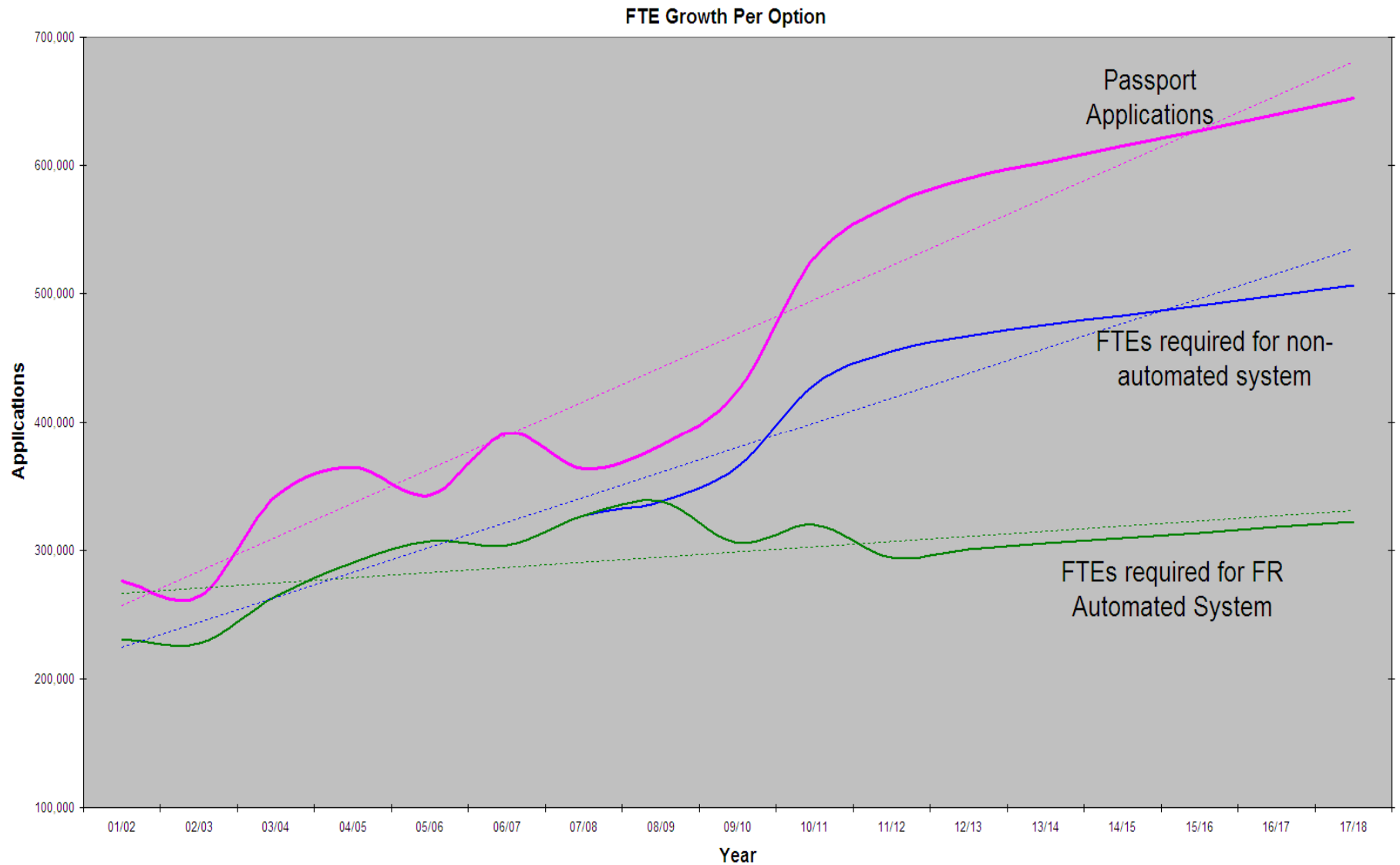
- Shift to 5-year validity in 2005
- Sharp volume increase in 2010/11 (almost double)
- Needed to increase production without increasing staff

Approach needed to be a holistic:

- Productivity and efficiency gains
- Increase integrity of data and process
- **Leverage our existing knowledge and investment - technology and quality EOI data**



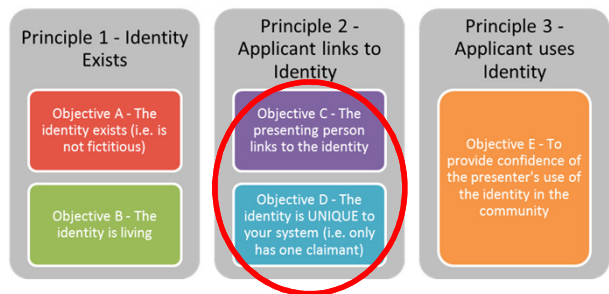
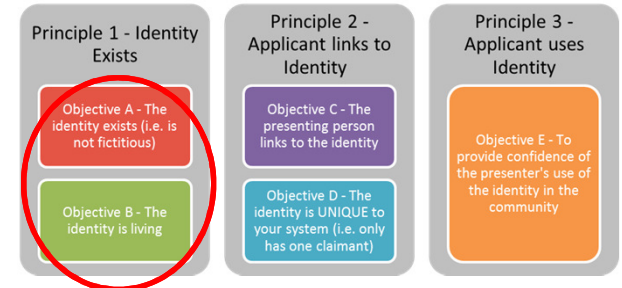
# Case Study: New Zealand (2)



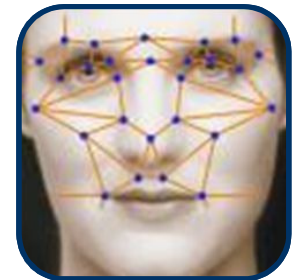


# Leverage EOI: Identity Exists

- Re-use the passport data for renewals
- Remove waste steps – why recheck documents?
- Death checks against central database
- Automated checking – faster and more accurate

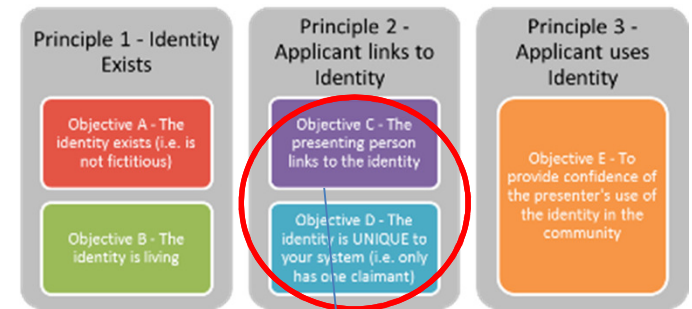


Applicant Links and is UNIQUE to the System: What is possible if you have high confidence in uniqueness to the database?



# Confidence in Uniqueness: Biometrics

- In order to ensure we could use FR effectively, significant time and resource was invested in cleaning up our database
- Many to Many match:
  - 4.5 Million images, 21 Trillion matches, 210,000 matches of interest
  - Remove poor quality images
  - Merge or 'tag' duplicate records
  - Identify fraudulent activity and modify risk profiles

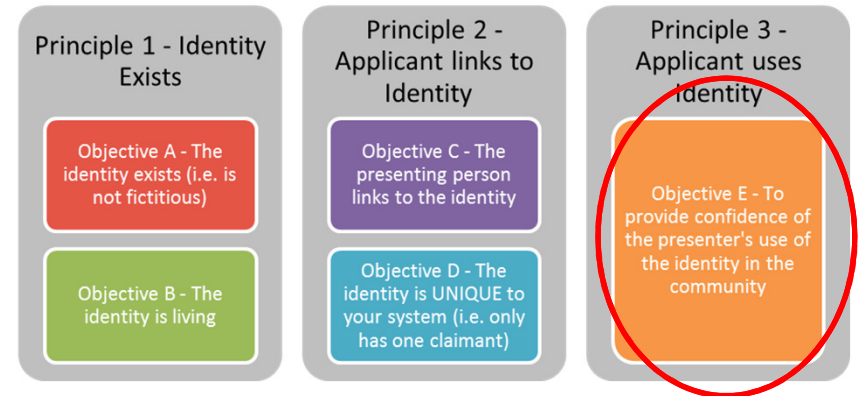


## New Approach to Biometrics:

- The best use of biometrics from a business perspective is to facilitate automation and increased productivity (1:1 match for renewals, 1:N for new applications)
- Security benefits are a welcome bonus ...

# Leverage Data: Social Footprint

- Identity Referee
- Known to our database and contactable
- Continuity and longevity of information
- Starting to use address verified

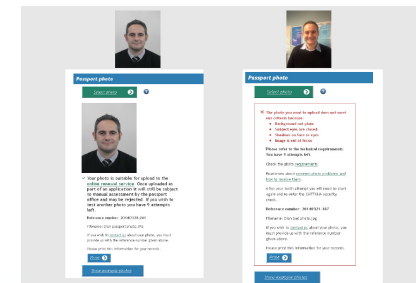
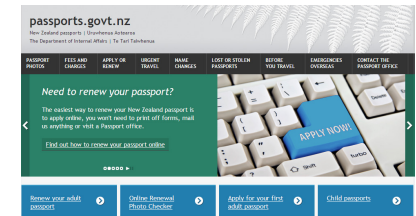


## Overlay Automated Risk Profile

- Intelligence
- Risk indicators
- Adjusted tolerances for facial recognition

# The Outcomes

- 128 automated checks – double passport volume without staff increase
- Staff are concentrating their time on exceptions and NOT reviewing every single piece of information received
- Data accuracy (reduction in forms)
- Renewal services entirely online – started with renewals and built (children, family groups, urgents, lost/stolen)
- Over 50% of online pass all assessments and require NO entitlement decision from a passport officer
- Costs savings and improved customer satisfaction

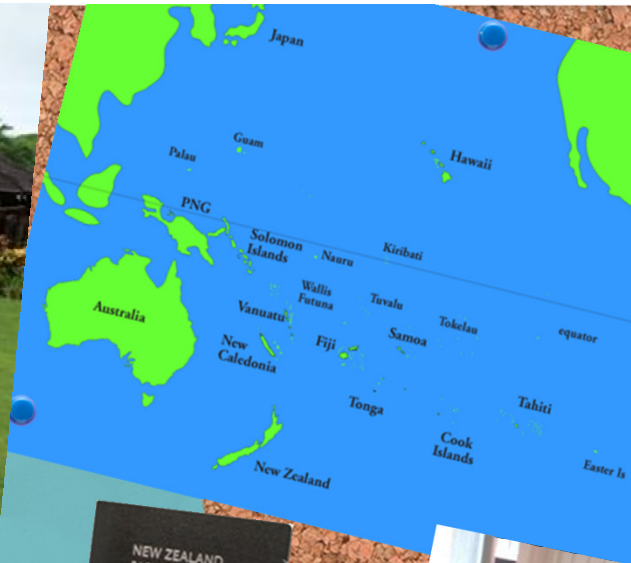


# Top Takeaways

- Identity verification is not absolute – it is dynamic, based on context, probabilities and levels of confidence
- REVISIT your approach to EOI, systems and processes - develop a case for investment in EOI based on security **AND efficiency**
- Develop and maximise your critical EOI data assets – robust first up processes allow automation and more informed risk-based EOI decisions
- Look for a flip-side benefit to your – if there is an EOI technology you are using to guard against something, there is a good chance it will facilitate something too – **MAYBE ACROSS GOVERNMENT**







**Thank you**

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