

## Emirates Identity Authority



## UAE National ID Card Program

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Milan, Italy, November 28<sup>th</sup>-30<sup>th</sup> 2006



# AGENDA

- Strategic Goals ..
- Registration Process ..
- Technology components ..
- Ongoing projects ..
- Lessons Learned ..



# **Project Goals ..**



# Strategic Goals



Identity  
Management  
System

Security



Economical



# Security & Economical Objectives



Security

enhance homeland security

minimise identity theft

improve access/delivery of public service

integrated population **database**

government **trusted identity** verification infrastructure

provide **identity verification services** to other ministeries, banks, hospitals, etc.

Economical

one card multi-uses

support strategic decision making

support e-Gov and e-Commerce

**unification** of existing cards and reduce management & production **cost** (e.g., dls', labour, health)

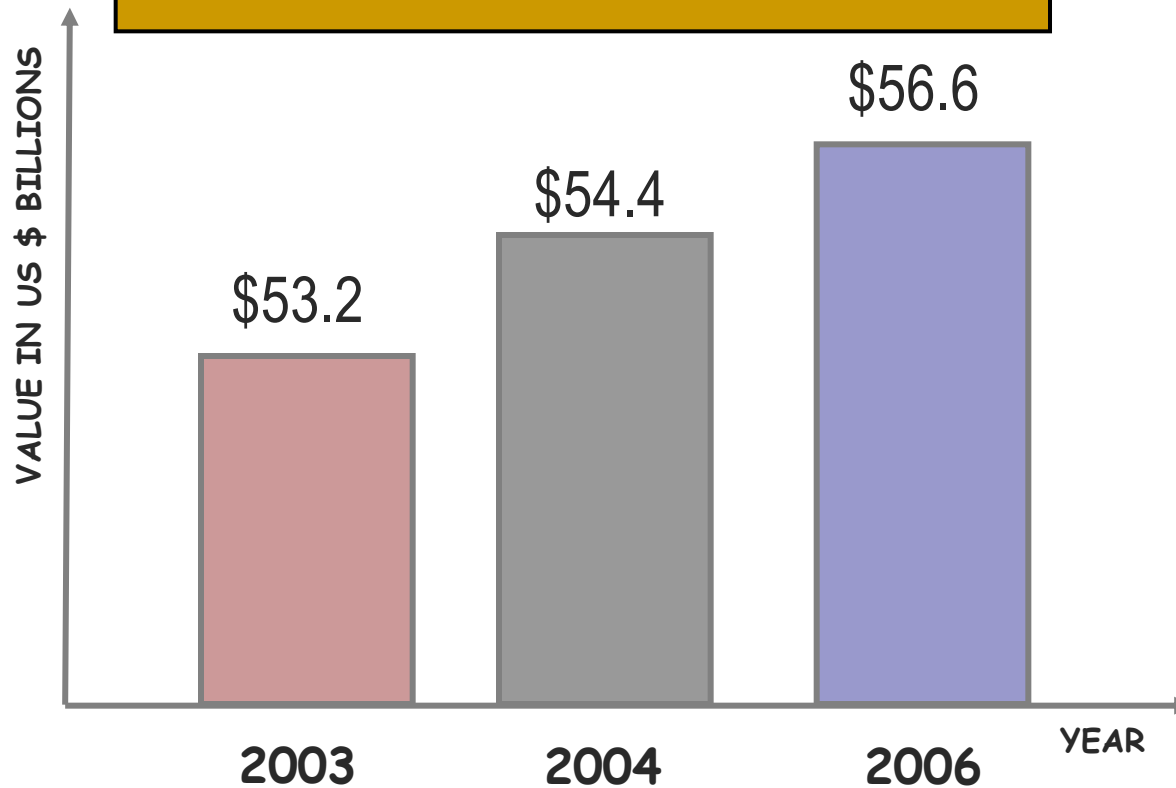
timely, accurate **statistical info.** for planning e.g., education, healthcare, energy, etc. )

national **e-authentication** infrastructure

# **ID card scheme and IDentity theft ..**

## Identity Theft ...

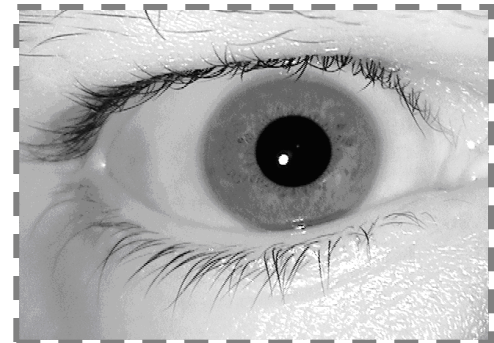
Worldwide = \$ 300 billion



Source: Privacy Clearing House, <http://www.privacyrights.org>

## UAE and Identity theft ...

- NO accurate figures of cases or cost..
- UAE iris system caught  
to date > 120,000 illegal attempts to  
re-enter the country after deportation..

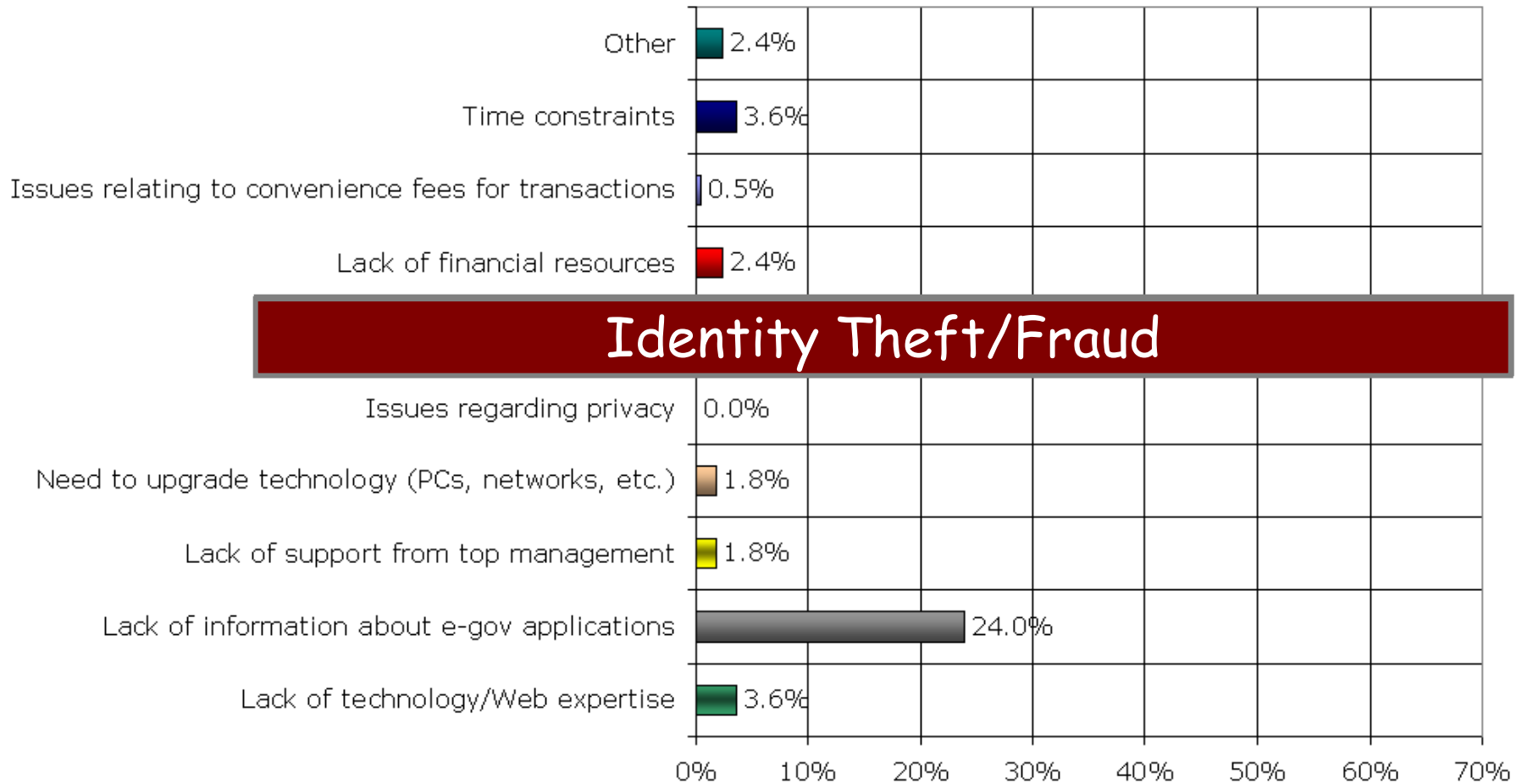




# GCC Survey 2006 ...



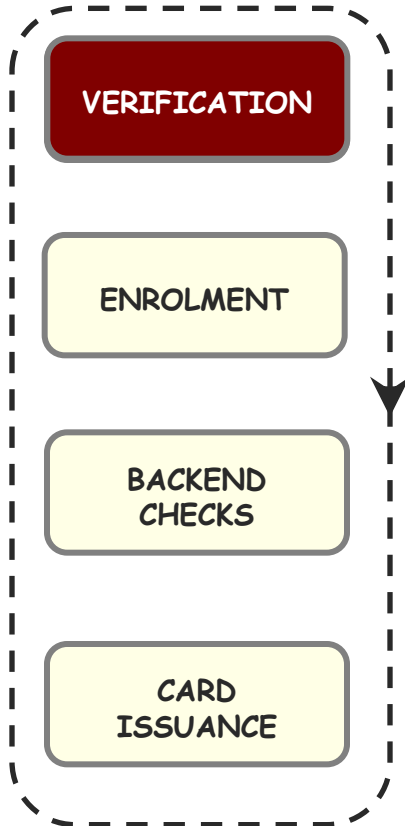
Al-Khouri, A.M. (2006) "National ID infrastructure and e-Government," Emirates Identity Authority, UAE.



# **Registration Process ..**

# Registration/Issuance Process

ID Registration-Cycle

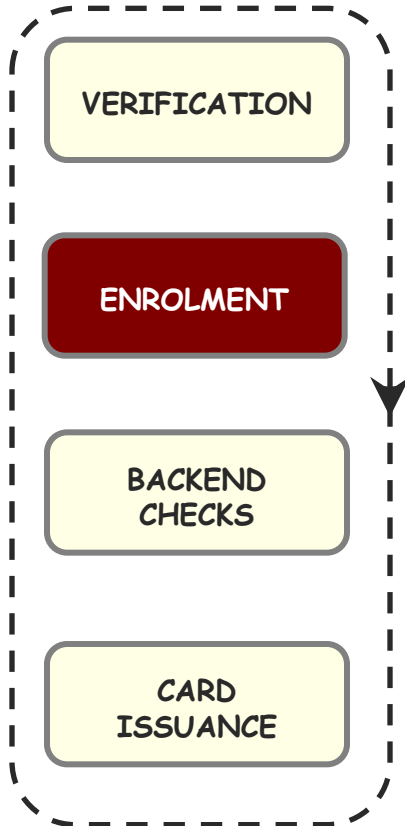


- checking government issued credentials e.g., passports and visas
- online verification of presented docs



# Registration/Issuance Process

ID Registration-Cycle

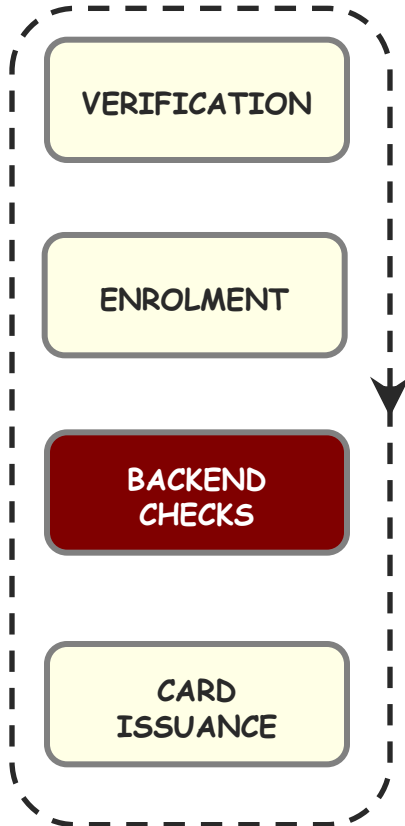


- capture photo
- hand signature,
- scan docs,
- biometrics.



# Registration/Issuance Process

ID Registration-Cycle

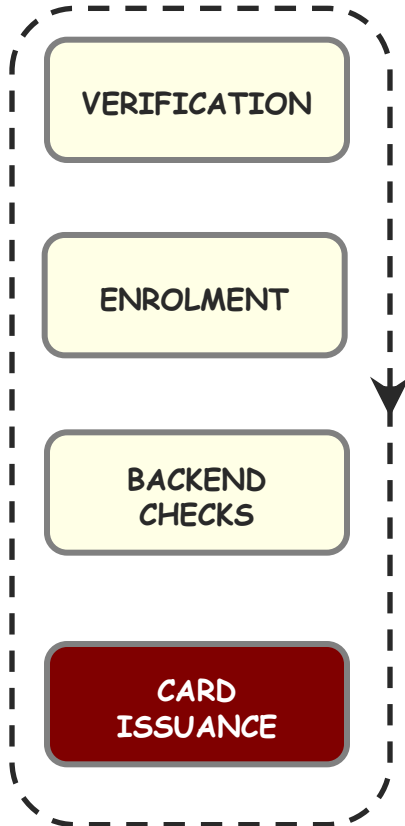


- background checks, e.g., biometrics, watch lists...



# Registration/Issuance Process

ID Registration-Cycle



- centralised card production
- pickup / home delivery



# **Card, System & Security ..**

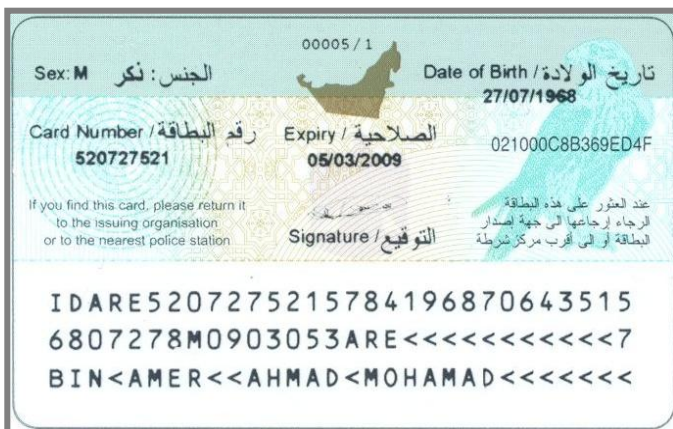
# Several anti-counterfeit physical features

chip data  
digitally  
signed &  
encrypted



## Overt:

- Guilloches & Rainbow
- Ghost image
- Holographic overlay
- Variable fine lines
- Special Raster
- UV ink
- Rainbow printing



## Covert:

- Micro text
- Hidden text
- UV



# Chip Information (Privacy?)

## Public Data

Name  
Nationality  
2 x fingerprints data  
(Match off card)  
etc

## Restricted data

digital image  
fingerprints  
(Match on card)  
other pers. info  
etc



# Architecture ...



## Security Measures:

application level: biometric & passwords

network level: VPN, DMZ, IDS, etc.

system Level

physical Level

## System Design

4-tier web-based architecture

latest standards

ISO

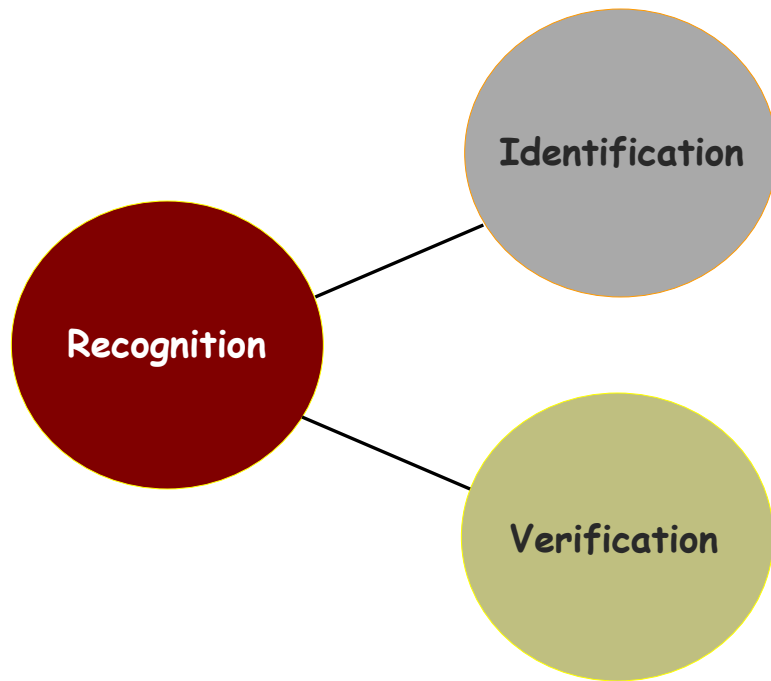
ICAO

x.509

high availability

# **Technology components ..**

## Project Primary Focus ...



Determining the identity of an individual by comparing a presented characteristic to all pre-enrolled in the database.

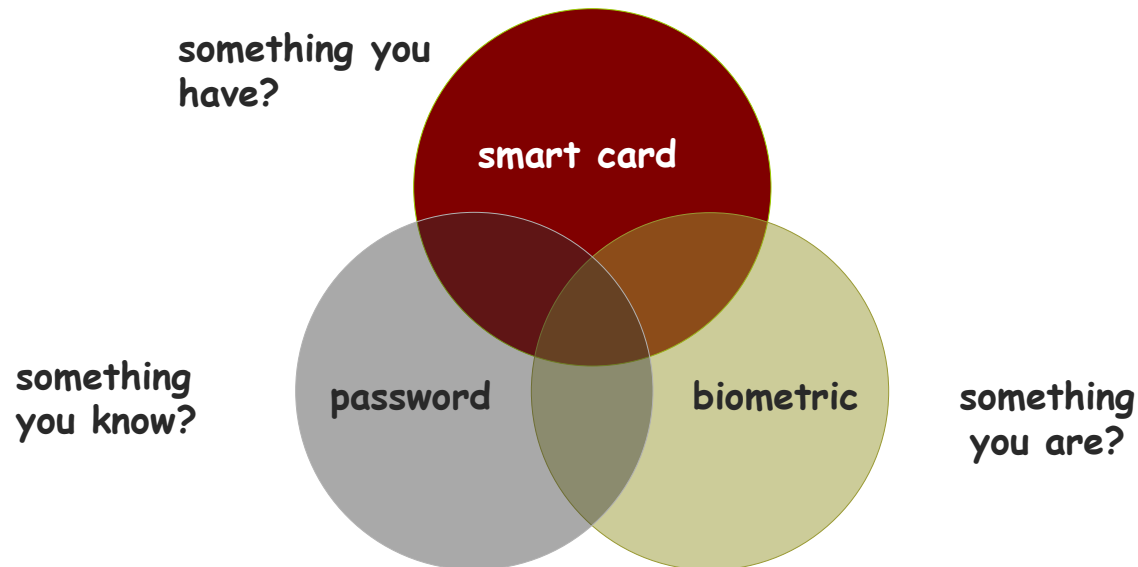
**WHO ARE YOU?**

Authenticating identity of an individual by comparing a presented characteristic to a pre-enrolled characteristic

**ARE YOU WHO YOU SAY YOU ARE?**

# Trust Chain: Technology ...

- a three factor authentication enabling technologies...



# Technologies ...



## Smart Card

Smart Card: Gemplus,  
Chipset: Infineon

ISO 7810, 7816-1/2  
compliant

Java-based OS, 32/64 KB  
EEPROM, 136 K ROM

compliant with Java Card  
2.1.1 & GP card specs. V2.0.1

contains person's data,  
portrait, certificates, and  
private keys

Updatable chip

## PKI

**Authentication:** Assurance of  
identity (*Digital Certificates*)

**Confidentiality (Data Privacy):**  
protection of data (*Encryption  
Algorithms*)

**Integrity (Authorisation):**  
data consistency and integrity  
(*Data Hashing*)

**Non-Repudiation:** ownership of  
document/transaction (*Digital  
Signatures*).

## Biometrics

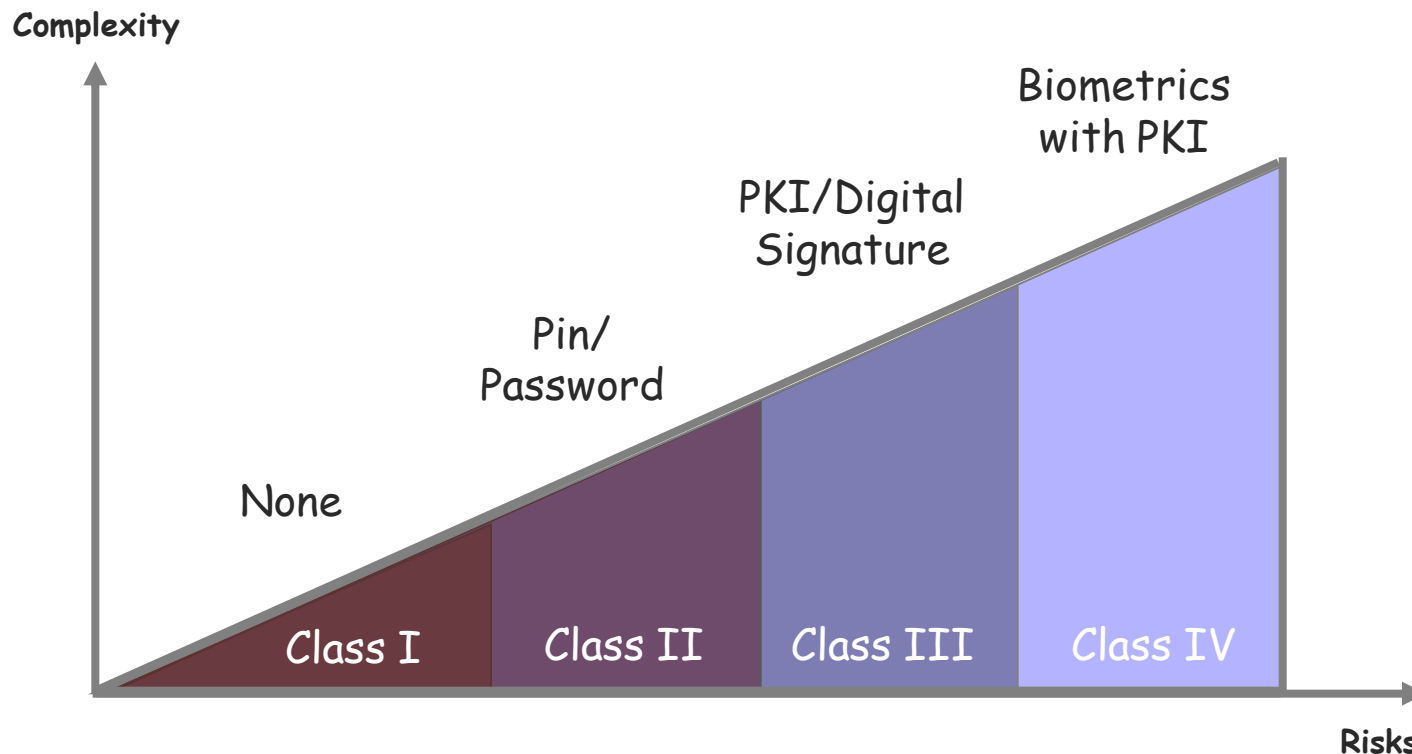
fingerprints (rolled prints,  
palm prints, writer)

... to improve FAR/FRR:

- facial recognition
- Iris recognition

## Choice of authentication ...

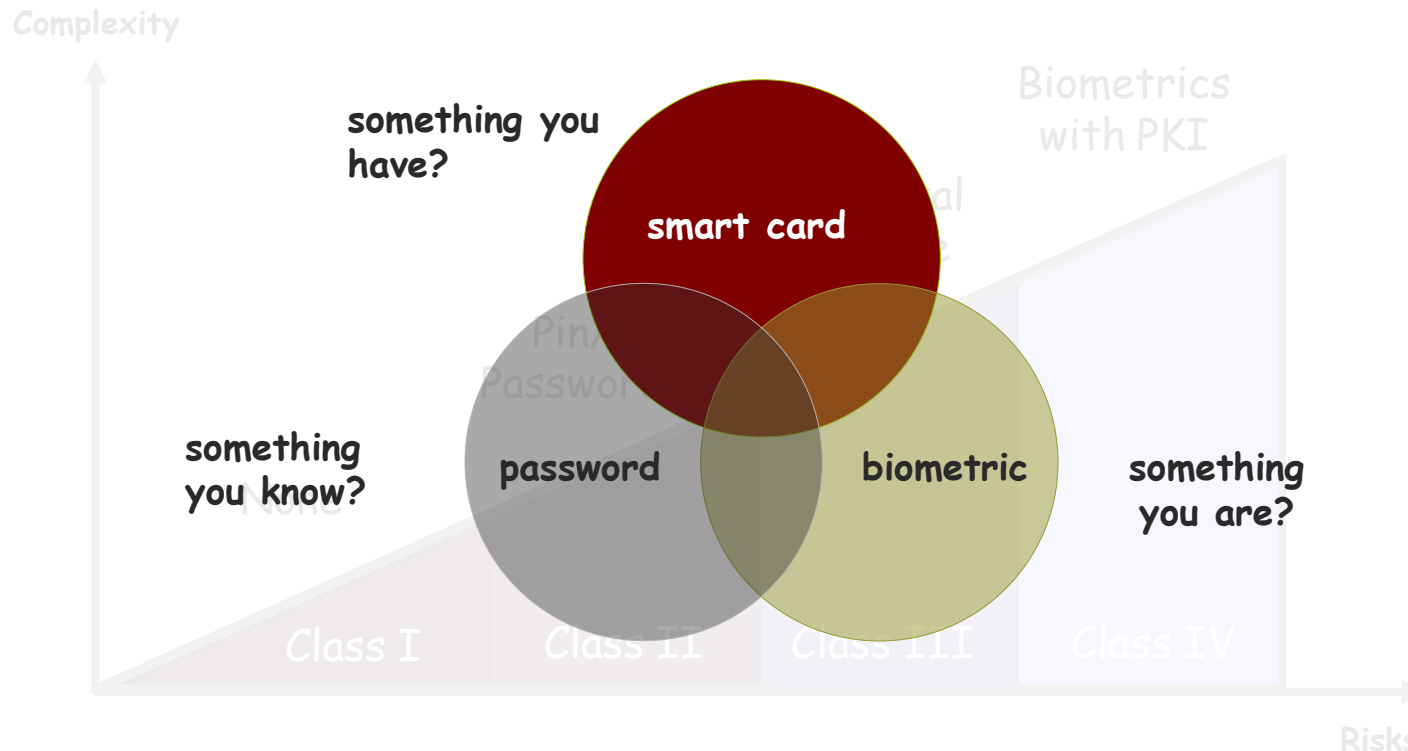
(examples of transactions)



\* as the level of risk associated with the transactions increases, the choices of authentication gets higher in complexity ..

# Choice of authentication ...

(examples of transactions)



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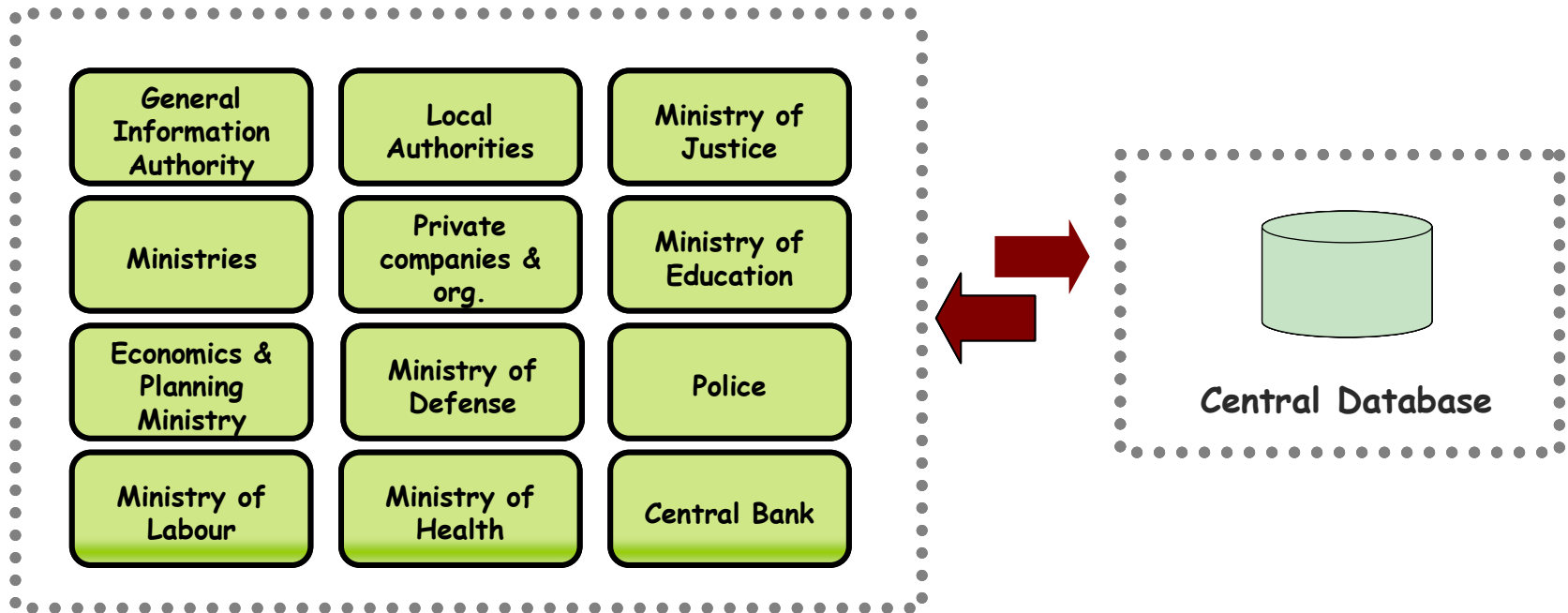
# **Ongoing projects ..**



# Collaborative Government Environment...

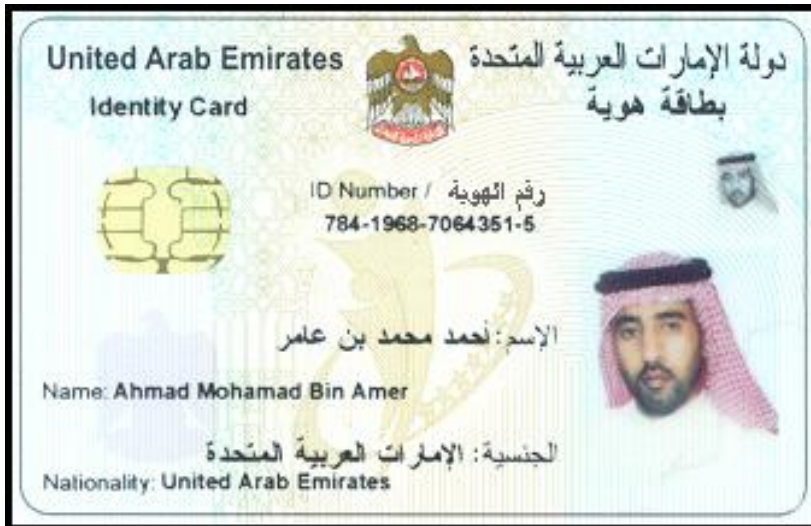


- interoperability & integration with other systems



# Unification of cards ...

*to also act as:*



Residency Permit/Card

Labour Card

Health Card

GCC Travel Passport

e-Gate

ATM Card

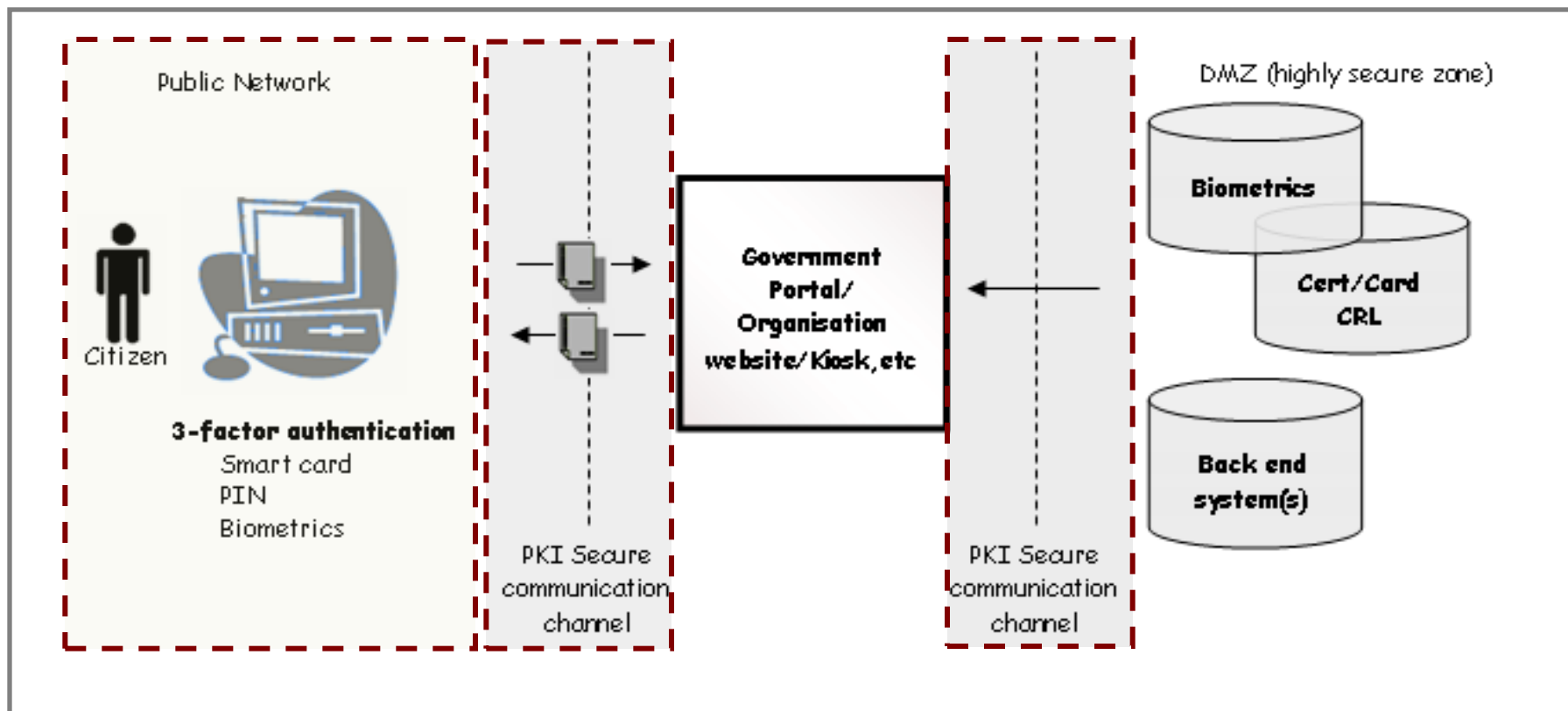
e-Purse (e-Cash - eDirham)

e-Pass (e-Gov)

....

# e-authentication

a simple e-authentication model to access and interact with the government





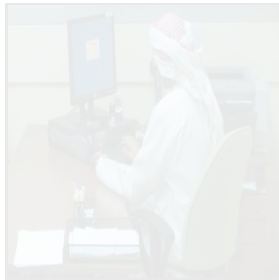
# **Some lessons learned ..**

# Registration process



- Present process requires three offices for enrolment (building cost)
- Three workstations are required for one enrolment line (equipment cost)
- If a problem with the enrolment of one applicant is experienced, the total line becomes un-operational

# Registration process



- Present process
  - Three workstations
  - If a problem with the enrollment of an applicant is experienced, the total line becomes operational
- olment (building cost)  
ent line (equipment cost)
- ## One Stop Registration Office

## Project Stages ...

### Stage I

Short  
Form

**Issue/Produce** ID cards to citizens and residents and minimise potential noise from public (make it smooth!).

### Stage II

Promote the  
use of the  
Card

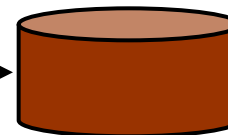
**Promote** (enforce) the presentation of ID card as a means for identity verification and pre-requisite to benefit/access to a government services.

### Stage III

Interface/  
Integrate  
with  
organisation

**Interfacing** and Integration with:

- Ministry of Labour (MoL)
- Ministry of Justice (MoJ)
- Ministry of Interior (MoI)
- Ministry of Education (MoE)
- Ministry of Higher Ed (MoEd)
- Ministry of Health (MoH)



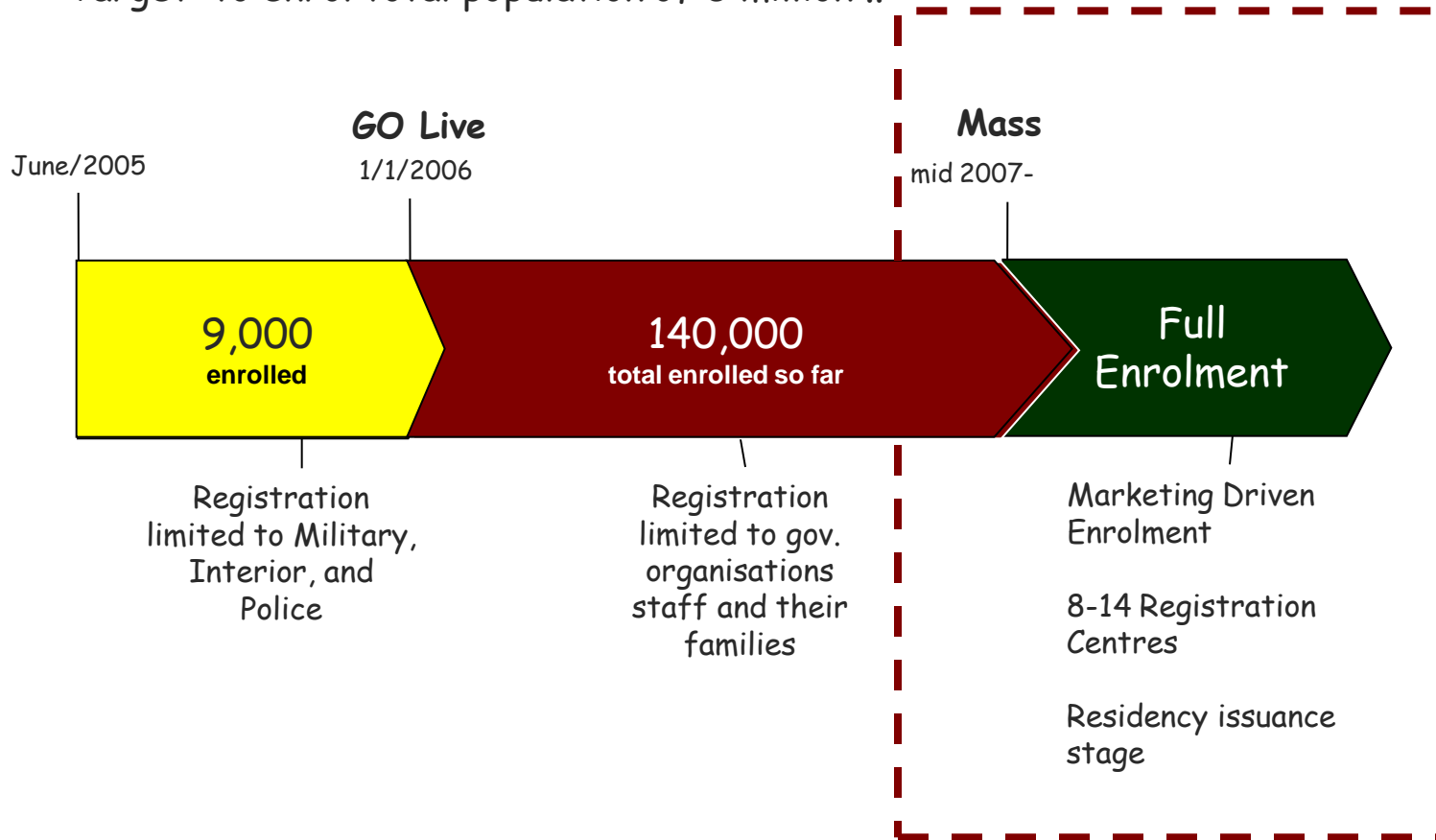
data warehouse



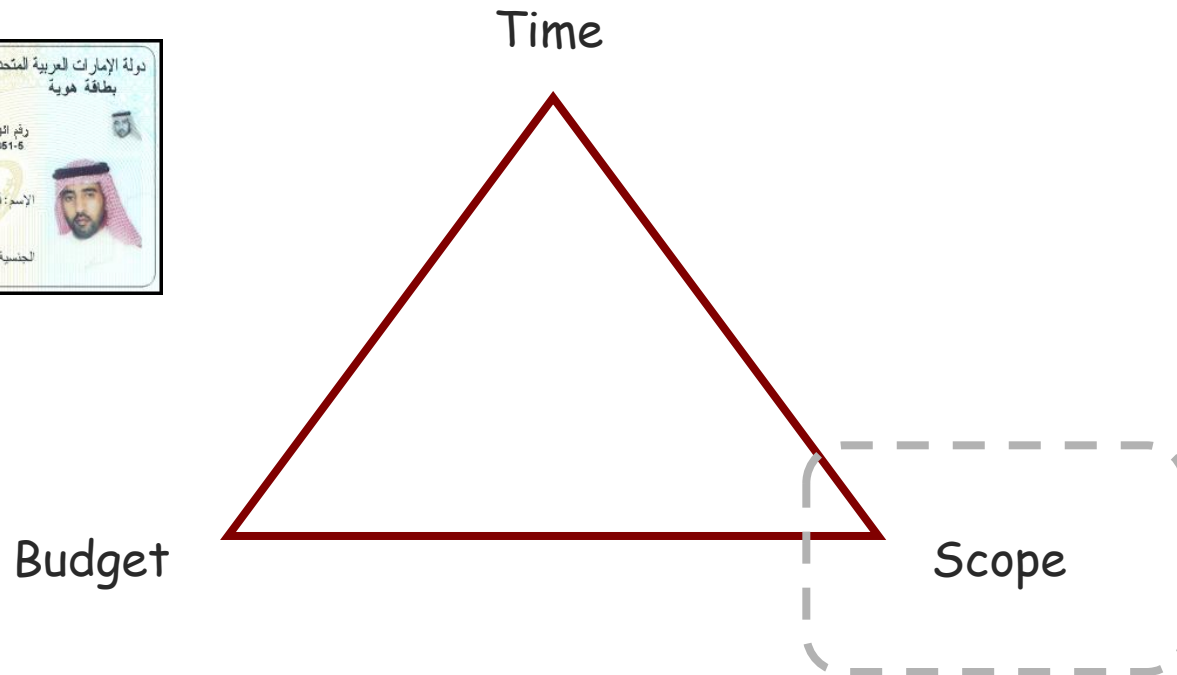
# Enrolment Strategy



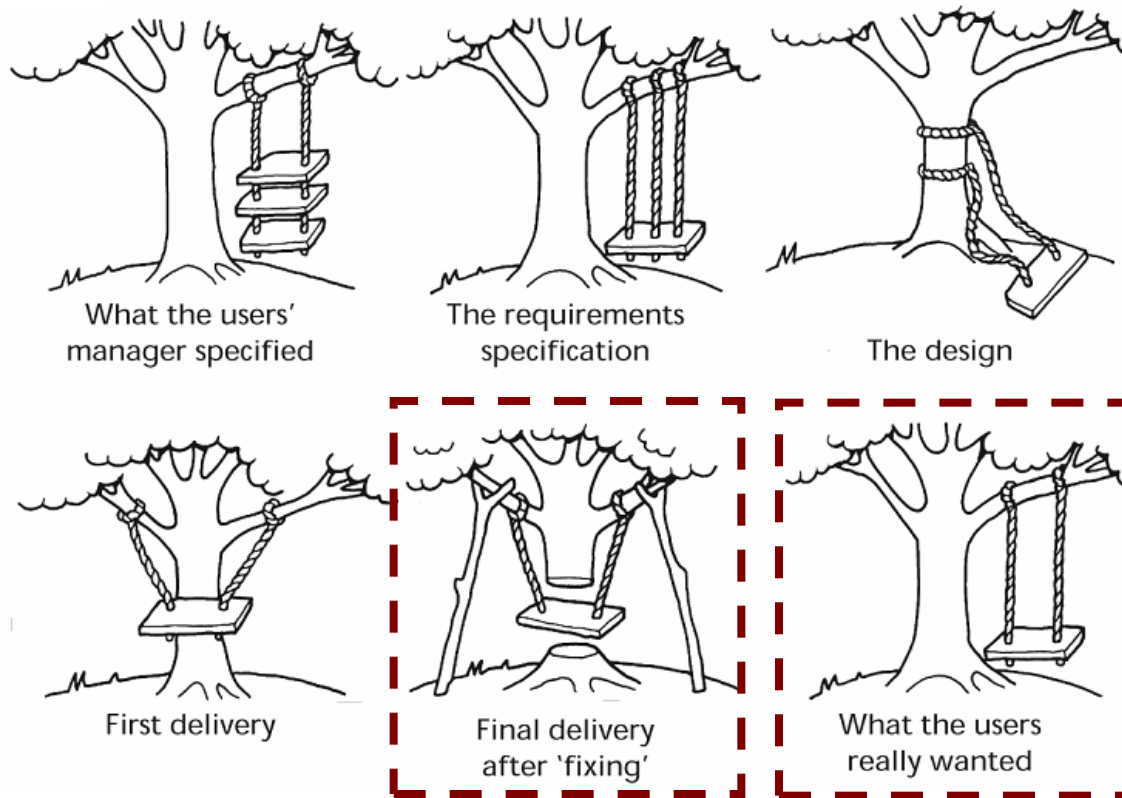
Target: to enrol total population of 5 million ..



# Scope Creep



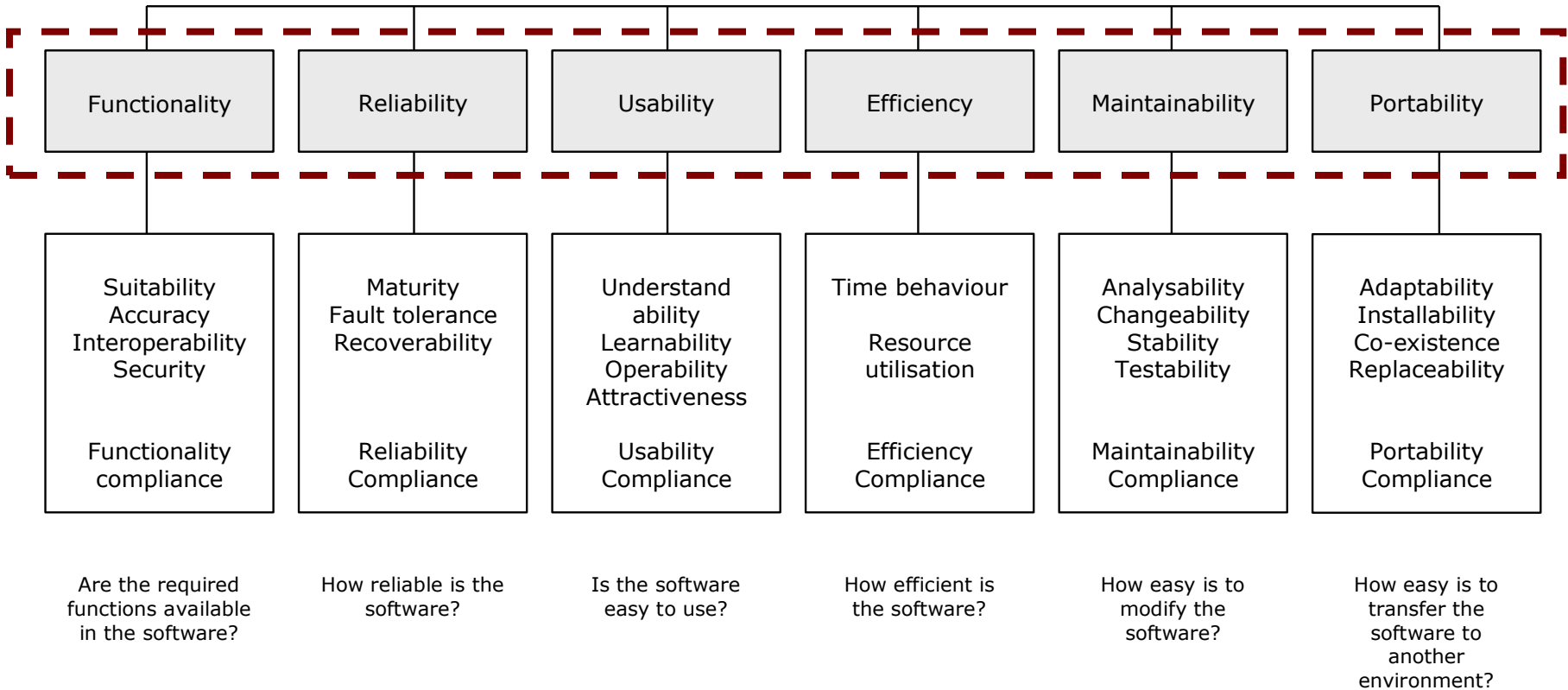
# An example of varying interpretations of user requirements:



# Quality Acceptance Framework ...



## ISO/IEC 9126





**Thank you...**

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