

Identifying the benefits of ID cards

Any ID card project must be widely used by the general public if it is to achieve its goals, thus such initiatives must bring people tangible benefits if they are not to be seen merely as an invasion of individual privacy. **Saleem Ahmed Moeen** explains how NADRA applications balance citizen-centric services with security demands to make ID cards beneficial to all

Since it was established in 2000, Pakistan's National Database & Registration Authority (NADRA) has proved highly successful in establishing a comprehensive record of the population of Pakistan. More than 93.5 million citizens have registered in the database, a number growing by 20-25,000 citizens each day. Such has been the success of the database that it now forms the backbone of Pakistan's highly successful national ID card programme. This success is partly attributable to the fact that the authorities recognised the need to provide citizen-centric services in order to encourage widespread adoption. To date more than 62.5 million ID cards have been issued to citizens over the age of 18, with a 'single identity' having been successfully implemented for each citizen, thus bringing identity theft down to negligible levels.

This success has been made possible by using technology capable of creating one of the largest fully integrated databases in the world, indeed the NADRA's Data Warehouse utilises both an Automatic Finger Identification System (AFIS) and a Facial Recognition System in its aim of providing a comprehensive picture. However, citizen registration is not a stand-alone project and must include the following essential components if it is to achieve its aim of providing a comprehensive, secure record of national populations:

- Interactive data acquisition centres to include biometric data capture of photographs, fingerprints and/or iris recognition
- A data warehouse for the storage and management of data
- A dedicated and secure wide area network to connect all centres, along



with a system to transfer the data. This must also cater for all online secure transactions, including financial transactions

- A secure card production facility. The card must be cheap yet very secure, with easily recognisable tamper-proof security features. It must also be extremely durable so as to ensure its economic sustainability
- A card distribution methodology
- A Customer Relationship Management (CRM) system to track all transactions /activities relating to birth/death/marriage/divorce, ID cards and all associated products like passports, bill payments, merchant accounts, ID card as a debit card, etc
- An online real-time MIS (Management Information System) to track the activities of all data acquisition outlets
- A call centre to keep the public informed of the latest developments
- A highly efficient, fast multi-lingual search engine. (If the database is in a language other than English)
- A fraud/blocking control mechanism
- A completely paperless environment

with storage/retrieval of documents for legal requirements

- Enterprise Resource Planning (ERP) is crucial if we are to efficiently monitor and control what are often very big projects where the chance of failure cannot be ruled out
- An online ID card/data verification system connected to all of the most important public and private institutions. These institutions include banks, registration/passport offices, leasing agencies and security agencies, with a PKI (Public Key Infrastructure) necessary so as to ensure the authenticity of all transactions
- The economic viability of the programme must be ensured
- The ID Card system must eventually use the citizen's database in applications which merge the requirements of the citizen with the overall need for security and good governance
- Finally, besides the need for a high level of political will behind any ID card project, the most important aspect is that the public should also

wholeheartedly support it. This means that they need to see that ID cards

bring real benefits to their everyday lives. Without a high level of public support, maintained by ongoing efforts on the part of the authorities to ensure they meet public needs, such projects cannot succeed

The limitations of stand-alone biometrics

Facial systems can be fairly accurate. However, this is only the case if the photographs comply with ICAO standards. Facial technology has its limitations; it cannot be used as a stand-alone biometric identifier. On the other hand fingerprint identification is very accurate, but at times some people do not have the required number of minutiae needed to generate accurate results. As things stand NADRA's database totals more than 59 million photographs and 30 million citizen's fingerprints. With these numbers increasing daily, the answer to how best to incorporate the gathered data lies not only in a multi-modal biometric system, but also in a logical data model (LDM) that is capable of bringing in the synergy of all available data and biometrics to get optimum results.

Possible citizen-centric applications of the ID card include:

- Online verification of identities by banks, telecommunications companies, land/property ownership records, taxation departments and other government/law enforcement agencies. Currently more than 2,700 institutions in Pakistan use the verification system.
- Food subsidy system. The database identifies and verifies the status of the poorest members of society, who are then given food items at reduced rates. The web-based application authenticates the purchase by matching the fingerprints directly from the database in Islamabad. The system ensures that only the earmarked person or his family gets the government subsidy. There is no duplication and total transparency.
- As the basis of identification/authentication for the issuance of the

multi-biometric passport.

Similarly, the NADRA Kiosk allows the citizen to use cash for the following daily activities:

- Utility bill payment for all of the 27 electricity and gas companies in Pakistan
 - Cellular prepaid eVouchers /ISP prepaid eVouchers/Calling cards, etc.
 - Citizen verification
 - E-toll account charging through Kiosk
- The ID card with the fingerprint provides a more secure money transaction methodology than the present system of cheques with a signature or the credit card with a PIN. The ID card as a debit card is our next goal, a development which has a number of potential applications:

- Use of the ID card for remittances, local transfers, etc.
- The use of the ID card as an instrument for on line eGovernance projects, these include:
 - i. Pension disbursements
 - ii. Saving schemes
 - iii. Government insurances and guarantees
 - iv. Agro-based disbursements
 - v. Micro financing /credit
 - vi. eTicketing
- Automated form filling for various applications by downloading data from the database using the ID Card and authentication through fingerprint

Due to their success in virtually eliminating identity theft, most public organisations use ID cards for their day-to-day activities. Indeed, many organisations use the ID cards and their unique identification number in order to build their individual customer relationship management database. Furthermore, as the ID card has become a necessity for an increasing number of economic and social activities, the demand for it has increased exponentially. This has led to a rapid increase in the numbers of people registering, which has had a corresponding impact on those within the industry. In our case, NADRA's revenue for verification services this

financial year (2007-2008) is expected to surpass \$10 million, a figure which is encouraging us to be ambitious in our future plans.

We hope to increase the use of ID cards by introducing them as the debit card for Pakistan with POS (Point of Sale) machines in (amongst others) every shop, bus, restaurant, train, warehouse, wholesale market, livestock auction and factory. ID cards can even be used as voters cards, while NADRA also has a comprehensive multi-biometric ID card programme in which all the various elements are already operational. There are 62.5 million ID cards in the private network, while CRM, call centre and the ERP are all completed. An integrated multi-biometric passport programme that has issued more than 5.2 million passports. Similarly ID Card-centric programmes like bill payments, cash disbursements, RFID driving licences and vehicle registration applications have been implemented. All of the software applications (except the AFIS & Facial) were developed by NADRA themselves within Pakistan, including one of the world's fastest bi-lingual search engines, a programme which has given a particularly crucial boost to law enforcement. NADRA's Internal Security & eGovernance solutions have proven themselves within a number of extremely testing environments. Our practical experience and the successes we have had on the ground encourage us to extend our horizons still further. **eS**



Saleem Ahmed Moeen has been Chairman of NADRA – the largest public sector IT organisation in Pakistan – since August 2001. Under his leadership NADRA has issued 62.5 million ID cards, while he also designed the new multi biometric ePassport which was launched in October 2004.