

Facing the Challenge of Enrolment in National ID Schemes

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Abstract

This article presents the approach followed in the United Arab Emirates (UAE) national ID scheme to register its population for the new smart ID card it launched in 2005. It presents how the organisation reengineered its operations to achieve its strategic objectives. It also presents some of the experienced challenges, and how they were dealt with. Some key management consideration areas were also listed for the purpose of sharing knowledge and experience in the field.

Keywords:

National ID, ID Card, population enrolment, process reengineering.

1. Introduction

Governments around the world have been very much attracted to National ID programs. These programs are globally justified on the basis of building an identity management system to achieve primarily two objectives: support national security and improve access to services [1]. More than 30 countries have initiated smart ID card programs in the last decade with a total value of those projects exceeding \$24 billion. Besides, more than 15 countries are in the process of upgrading their current ID cards to biometric based systems.

GCC countries have been among the first countries to launch biometric based smart ID card initiatives. Due to nature and complexity of such schemes, these initiatives have been challenged to meet its specified projects scope, timelines, and budgets. Table 1 below shows the progress of smart ID card schemes in GCC countries and the percentage of population registered so far.

Table 1: ID card projects in GCC countries [2]

Country	Program Start Year	Total Population	Registered population	% to total population	Biometrics
Saudi Arabia	2004	28,686,633	1.2 million	4.2%	2x Flat prints
UAE	2005	8,200,000	1.8 million	22.0%	Rolled 10 prints, palm & writer prints
Kuwait	2009	2,691,158	200,000	7.4%	Rolled ten prints
Bahrain	2005	1,039,297	800,000	77.0%	2x Flat prints
Qatar	2007	833,285	100,000	12.0%	2x Flat prints and Iris
Oman	2004	3,418,085	3 million *	90%**	2x Flat prints

* biometric capture is not mandatory for females

** not all registered have biometrics in the database.

Our observations of national ID card projects show that many countries are struggling with the enrolment of population in their ID schemes. Apart from the technical complexity of such projects, the most significant challenge lies in the fact that these programs include biometric acquisition which entails the presence of individuals. Some countries capture only two fingerprints, others capture a full set of fingerprints including palm prints and writers, while others use a variety of biometric identification systems such facial, iris, and fingerprints.

The practice of biometric acquisition was previously limited to forensic and traditional law enforcement applications. For obvious reasons, developments of systems like fingerprints compared to other biometric systems and hence the maturity of the overall technology, did not take into consideration higher levels of customer or service satisfaction since the intended users were in forensic and police jurisdictions. Therefore, and based on the biometrics and verification procedures, the registration process can be time consuming and inconvenient. A well thought through enrolment plan that captures an understanding of population demographics and cultural elements, and follows a modular approach of gradual registration based on geographical distribution and other segmentation factors, is likely to yield more successful results.

This article presents a case study of the process followed to develop an enrolment plan to register the population of the United Arab Emirates. It touches upon a broader organisational scope, and presents essential lessons learned and important building blocks for government officials working in this field. Though the project size and targeted population is considered relatively small in comparison to other countries, the presented processes and overall thoughts are believed to contribute and advance existing knowledge.

2. Emirates Identity Authority

Emirates Identity Authority was established in 2004, as a federal government authority tasked to build an identity management system, by enrolling and issuing ID cards to more than 5 million people at the time. The organisation relied primarily on a social marketing strategy to enroll the population and its copious developed strategies only succeeded to enroll less than 20% of the total population over a 5 year period. This represented a challenge to overcome and a difficulty to justify the heavy budget expenses and no clear return on investment (ROI) upshots. Altogether, this forced the organisation to go through muscular change process to address this problem area.

A four-staged change process was developed to guide the change implementation, as depicted in Figure 1 below. The change process was instigated to enact an organisational mindset change with the aim of developing a service driven and result oriented organisation. It also aimed to increase accountability, improve efficiency, overall performance and high quality services.

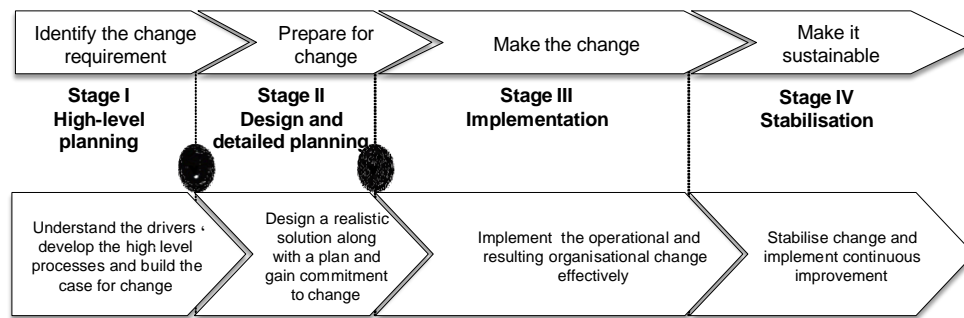


Figure 1: Change management program components

The initial phase of the change process dealt with the identification of the change requirements and building the overall case for change. The second phase was more of a planning phase, and included detailed assessment of the impact of change to the overall organisation. The third phase was about implementing the change according to the plan, and the fourth was more of an improvement and sustainability stage.

The outcome of the first phase was the development of an operating model that captured the fundamental and evolving functions of the organisation. It provided the foundation and flexibility required to execute the organisation's initiatives. As depicted in Figure 2, the primary function that needed to be addressed at first was population enrolment. As the organisation progresses, the function of enrolment will shrink down to become less than 20% of the overall operation. The organisation's role will turn gradually into a service delivery function related to authentication and identification. This model is considered to be a valuable knowledge to existing literature in the field, as it is generic and applicable to all ID card programs.

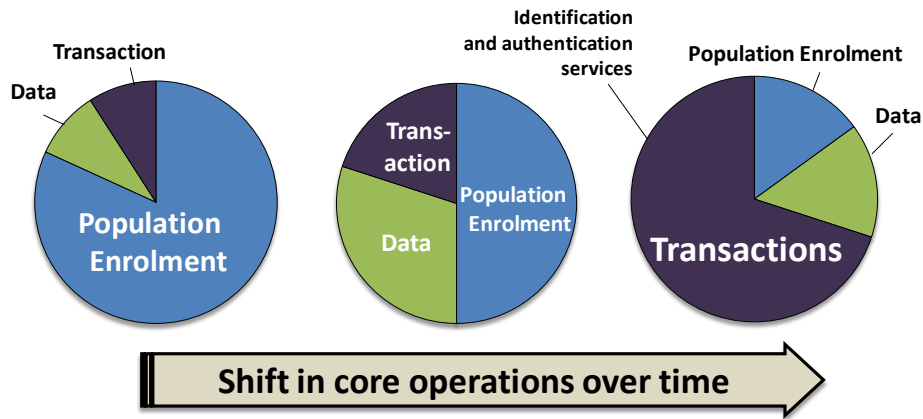


Figure 2: The operating model

Another outcome of the first phase was the development of the core pillars of strategic directions that would determine the success of the overall program. See also Figure 3. They were later used in the development process of the corporate strategy and the design of the consequent initiatives. These pillars included:



Figure 3: The core pillars of strategic directions

- **Effective population enrolment strategy:** develop strategies to increase population enrolment, that incorporates marketing, outreach, program, and staff development efforts to increase enrolment in an effective manner.
- **Integration/Interface with key government organisations:** keeping the population register database timely updated, is essential to the overall success of the program. Connecting to the databases of "data owners" is therefore inevitable. Six government entities were identified: (1) Ministry of Interior: immigration; (2) Health Ministry: birth and death; (3) Labour Ministry (4) Justice: marriage and divorce; (5) Education, and (6) Higher Education.
- **Supporting e-Government:** to develop secure and robust infrastructure to support Governmental electronic services, in relation to the validation and authentication of online identities in electronic transactions.
- **Customer Focus:** to become a customer focused organisation, and complement enrolment strategy through renewed attention to the customers' interface with the organisation.

3. Registration: The status quo!



Figure 4: Applicants at registration centres

The existing process implied that the applicants needed to fill an application form at a typing centre or on the internet. They then may choose to take an appointment by the available online system, or go directly to the registration centres. The actual registration time varied from 15 minutes to 20 minutes, but waiting queues lasted from at least 4 hours to 8 hours before they get registered. Reasons for such deficiency included factors related to lack of flow management procedures at registration centres, unstudied media campaigns that attracted higher population to registration centres than their actual capacities, untrained staff, etc. The overall process caused public frustration and media criticism.

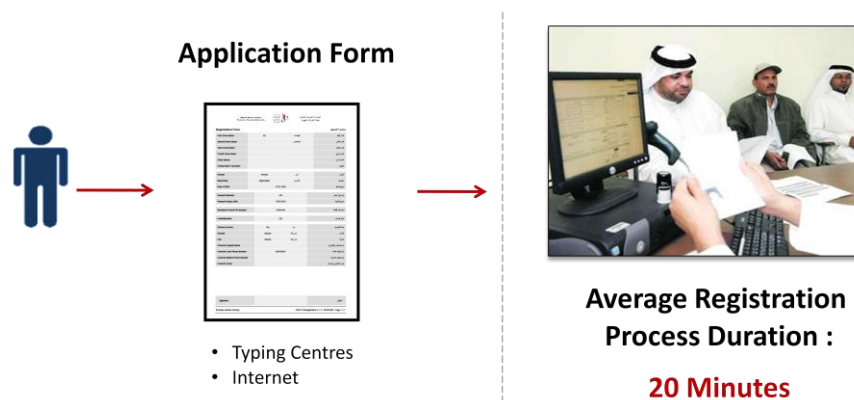


Figure 5: Registration process prior to re-engineering

Some of the *quick fixes* adopted by the organisation were to cancel the presence of the children to the registration centres, and rely on the supporting documents presented by the parents. The information was verified with the Ministry of Interior's database for validation. The second process change was related to how registration equipment were organised. The registration process at first, required applicants to go through three enrolment stations:

- (1) verification of documents and fee collection,
- (2) portrait and signature capture and scan in documents, and
- (3) fingerprinting. This process provided a smooth management of applicants flow.

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For reasons related to lack of resources, management at the time decided previously to merge some functions together, i.e., second and third functions and as depicted in Table 2. This poorly studied change resulted in longer and process "locked in" applicants. As the first process took normally 3 minutes to complete, the new combined process of taking portrait, electronic signature, scan in document, and fingerprinting, took almost 15 to 20 minutes, that created long waiting queues inside these offices. This also led to more data entry errors by operators.

The introduced change here included changing the process to keep fingerprinting as a separate function, and merge all others in a separate workstation. This allowed a better flow management as illustrated in Table 2 below.

Table 2: Example of tactical process changes

+portrait /verification fingerprinting		portrait +verification \fingerprinting		Criteria
2		2		Steps
fingerprinting	Verification and portrait	Portrait and fingerprinting	verification	Time
7	8	12	3	
2		2		Space
√		√		Privacy
equal		equal		Accuracy
equal		equal		Machinery Cost
equal		equal		Human Resources
organised		Not organised		Customer Flow
fingerprinting	Verification and portrait	Portrait and fingerprint	verification	Work Load
Equal	Equal	+	incomplete	
Best Choice		Secondary choice		Decision

These two change tactics provided temporary fixes, and supported better management of flows at registration centres. The next section will shed light on the developed enrolment strategy.

4. The need for an enrolment strategy

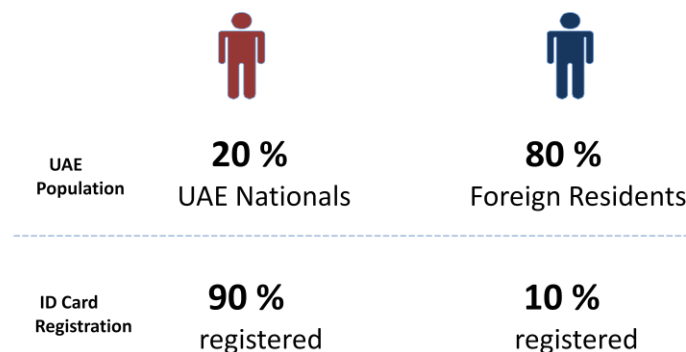


Figure 6: Registration vs. total population

According to the original enrolment strategy, it was envisaged that a total of 5 million people will be registered by the end of 2010. However, and towards the end of 2009, only 20% of this number were registered.

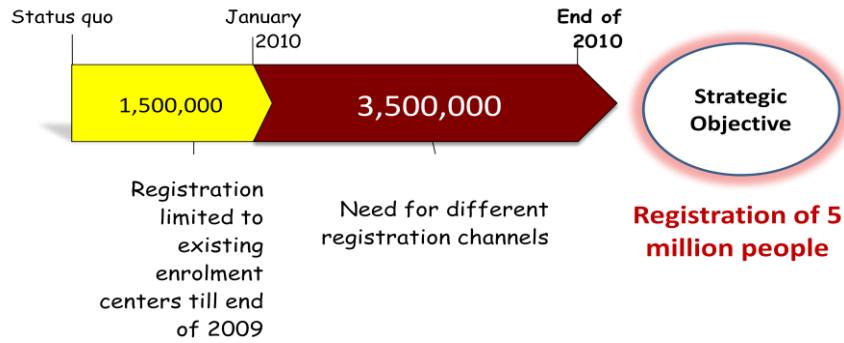


Figure 7: Enrolment plan

A study conducted to evaluate and forecast enrolment, showed that it would take Emirates ID more than 10 years to register the population with existing enrolment rates. As depicted in Table 3, the organisation needed to have a capacity of 20,000 enrolment per day (new and renewal) in order to achieve its objectives in the shortest and practical timeframe.

Table 3: Challenge of enrolment

Equipment and outsourcing	outsourcing	More equipment	available	Existing	
20,000	12,000	8,000	4,500	3,200	Daily registration capacity
4,800,000	2,880,000	1,920,000	1,080,000	768,000	Cards per year
1.6	2.7	4.1	7.2	10.2	Time needed to register 7.8 million people
12.1	11.5	9.6	8.7	0	Time savings (years)

Another factor that forced the development of an enrolment strategy was the increasing financial cost to the organisation and reprehensible revenues. Figure 8 shows that the cost of the card have gone up more than 30% higher than the fees paid by the applicants, as the cost of the card is dependent on specific annual registration.

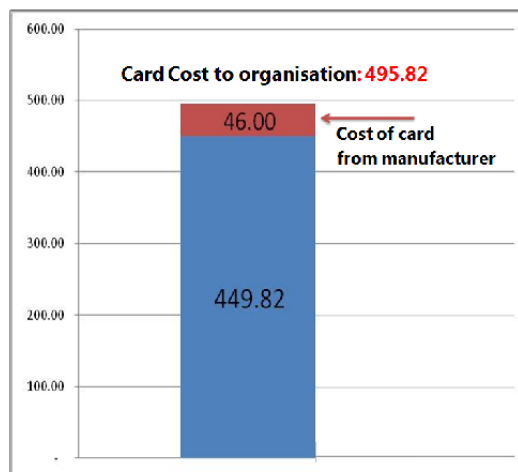


Figure 8: Card cost

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This meant that for each card, the organisation issued, it lost around 250 dirhams. In fact, the organisation needed to produce 1.6 million cards a year to make the breakeven point, and as depicted in Figure 9. All together, these factors forced the organisation to rethink its value proposition, and rework the overall enrolment strategy, which is discussed next.

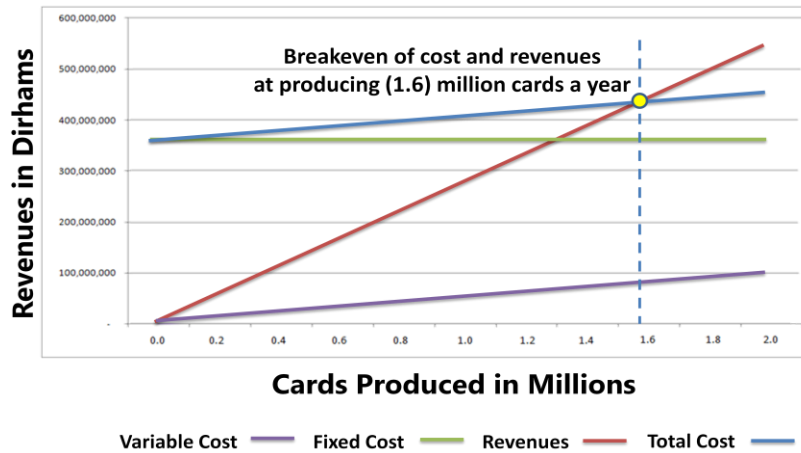


Figure 9: Cost and revenues

5. The New Enrolment Strategy

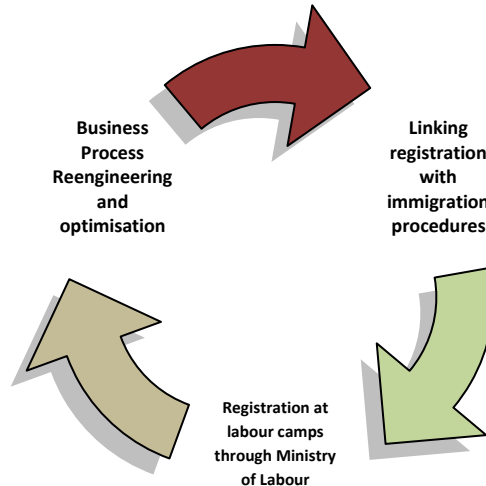


Figure-10: Focus themes of the new enrolment strategy

As indicated earlier, the previous enrolment strategy adopted in the organisation was a marketing based. The fundamental thinking that guided the development of the new enrolment strategy was to follow a process driven approach. The principles of this approach were based on the relationships between business processes that would promote public participation. The new strategy consisted of three main focus themes:

5.1 The new process: Reengineering of the enrolment process

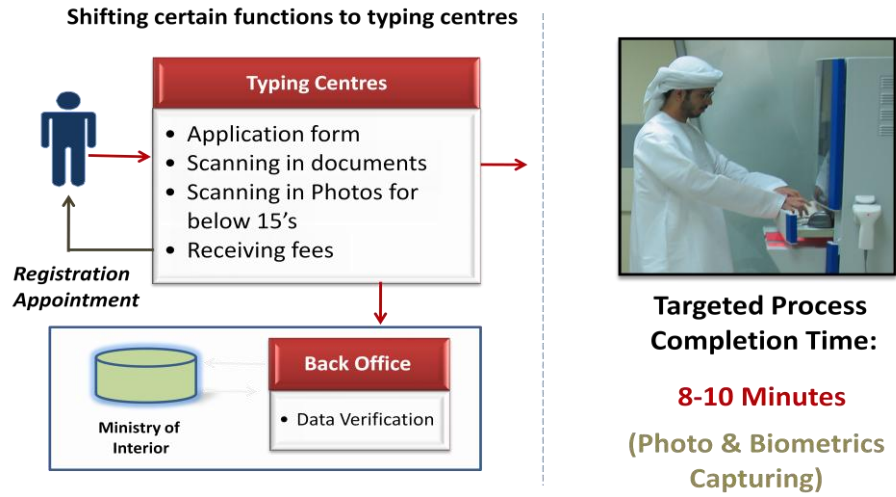
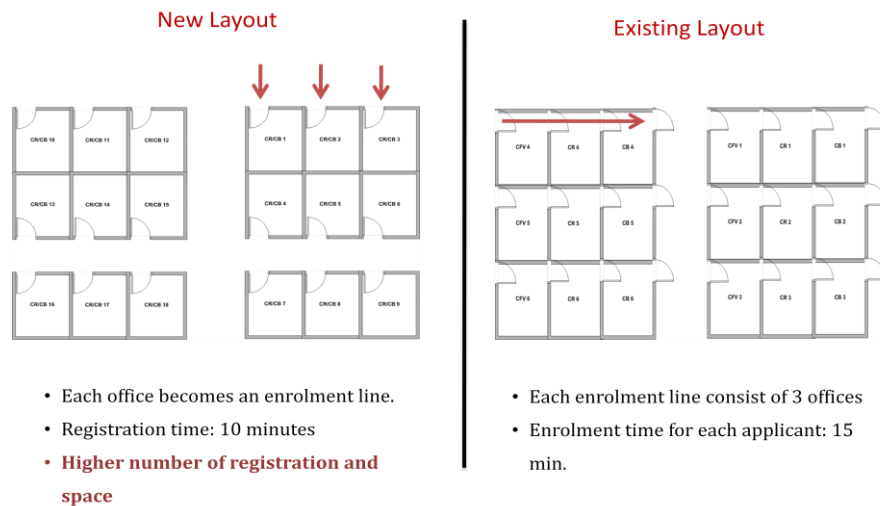


Figure 11: New registration process

The new process divides the registration into three segregated functions. More than 3000 typing centres in the government were equipped with a new application form allowed them to key in personal information, scan in documents, scan in photos for those below 15's, and accept payments, and automatically generate appointments to applicants. All these functions apart from the application form were previously done at registration centres. Registration centres new role was limited to do portrait and biometric acquisition only.

This implied an 8-10 minute process compared to 20 to 25 minute previously. Applicants' data is then transferred electronically to the internal audit office (back office) which verifies the complete dossier against the Ministry of Interior's database, and authorises or rejects applications. The new process made more than half of the previous procedures invisible to the applicants, as they were shifted to either back end or typing centres.

The new process also had a great impact on the existing registration centres layout. As depicted in Figure 12, the new process was considered as a *one stop shopping office*, and allowed higher capacity in terms of enrolment rates, and space utilisation.



- Each office becomes an enrolment line.
- Registration time: 10 minutes
- **Higher number of registration and space**

- Each enrolment line consist of 3 offices
- Enrolment time for each applicant: 15 min.

Figure 12: New process impact on registration centres layout

5.2 Linking registration with immigration procedures

The second focus theme of the enrolment strategy was to link the ID registration with the issuance and renewal of residency permits. Taking into consideration that the maximum validity of residency permits is 3 years, then it was assumed that all residents will be enrolled in this timeframe given that all registration sites are operational.

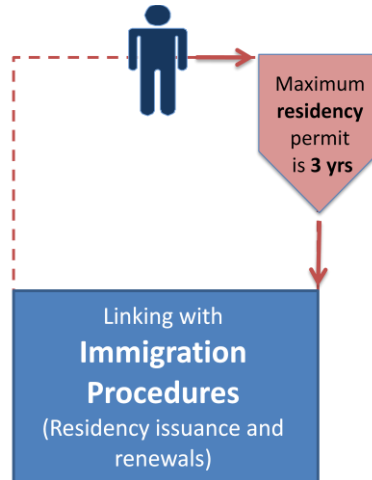


Figure 13: Registration linked to immigration procedures

In order to make the process more convenient to the applicants, new registration centres were envisaged to be built near existing preventative medicine centres; responsible to issue medical fitness certificates to complete the residency procedures. According to statistics, there were around 9,000 to 15,000 daily transactions of new and renewal of residencies in the UAE. This process merge between ID card and residency permit, was envisaged to enforce and increase the daily registration rate remarkably.

It was also noted in this focus area, that the residents during their application for issuance and renewal of residency permits fill different application forms for different entities, e.g., immigration form, labour form, and ID card form. Comparing the three forms, it was found that they were almost identical. It was then decided to merge the three forms to be a unified form for the three entities, besides the preventative medicine which also issues separate forms. This step would contribute to prevent double implementation of such procedures and promote data accuracy. The new 3+1 form will also include the feature of central fees collection for all four entities, payable at typing centres. The fees will be automatically transferred to the beneficiary authorities through an electronic clearance system.



Figure 14: Four forms required for issuing UAE residency permits

5.2.1 Registration Process

The registration process starts with the applicant or a representative visiting the typing centre to fill the unified application form. The form will also include the new functionalities described in section (5.1). Applicants aged 15

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and above will go to the preventative medicine centre for medical check up and go through the ID card registration office for portrait and biometric acquisition. Upon the acceptance of the issuance/renewal of residency permit, the immigration database at the Ministry of Interior, electronically notifies the ID card database, which will trigger card printing request, and dispatch it to the applicant through a registered courier. For the purpose of unification, ID card validity is linked with the residency permit. It is envisaged that once the process is streamlined, and reached to a satisfactory level, the residency sticker and labour card will be replaced with the ID card, as a single identity document for residents.

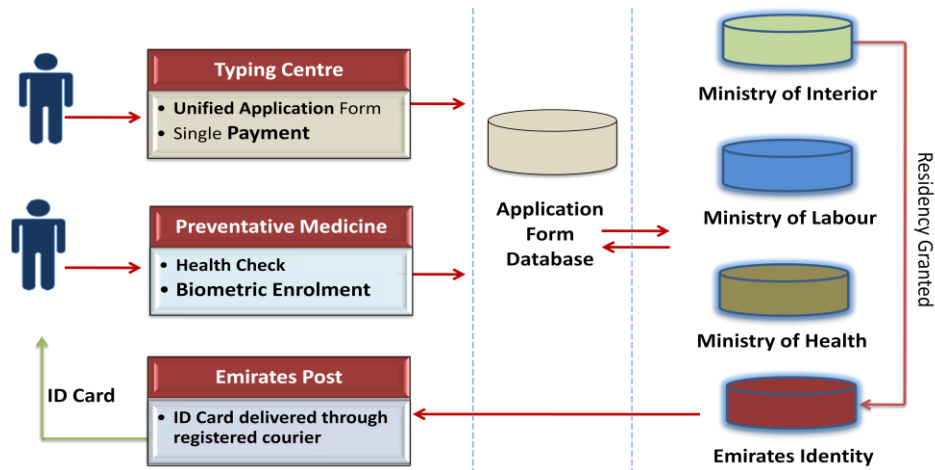


Figure 15: process of registration merged with immigration processes

5.3 Labour Registration



Figure-16: challenge of labour population enrolment

The third focus theme is the registration of labour population through mobile registration devices at labour campus or their workplaces. This will relax the traffic at existing registration centres. Existing statistics refer that the UAE has around two million unskilled labour population. The registration of this category was planned with the Ministry of Labour to ensure prompt registration and enforcement through their employing companies. Statistics also show that large number of labour camps have been developed in the past five years, with average residents in those camps ranging from 5,000 to 50,000 people.

Having presented the components of the enrolment strategy, the next two sections will briefly discuss the three remaining pillars of the strategic directions presented in section 2.

6. Integration with Key Organisations

One of the most strategic objectives of building an identity management system in the UAE was to make a central identity reference repository for the UAE government about population demographics, timely available census and statistical surveys. This database was also foreseen to provide decision makers with key data to enable informed planning decisions.

Maintaining an up to date and accurate population database is considered an impossible objective without a centralised e-information infrastructure to bring different databases together into one centralised repository. An initiative was developed called citizen data-hub that aimed to connect six key government databases together that were considered the "primary data owners". The secondary objective of this initiative was to establish dynamic and real-time links between administrative government departments across the country, thus enabling information sharing that ultimately contributes to the better administration of the country and provision of service delivery. See also Figure 17.

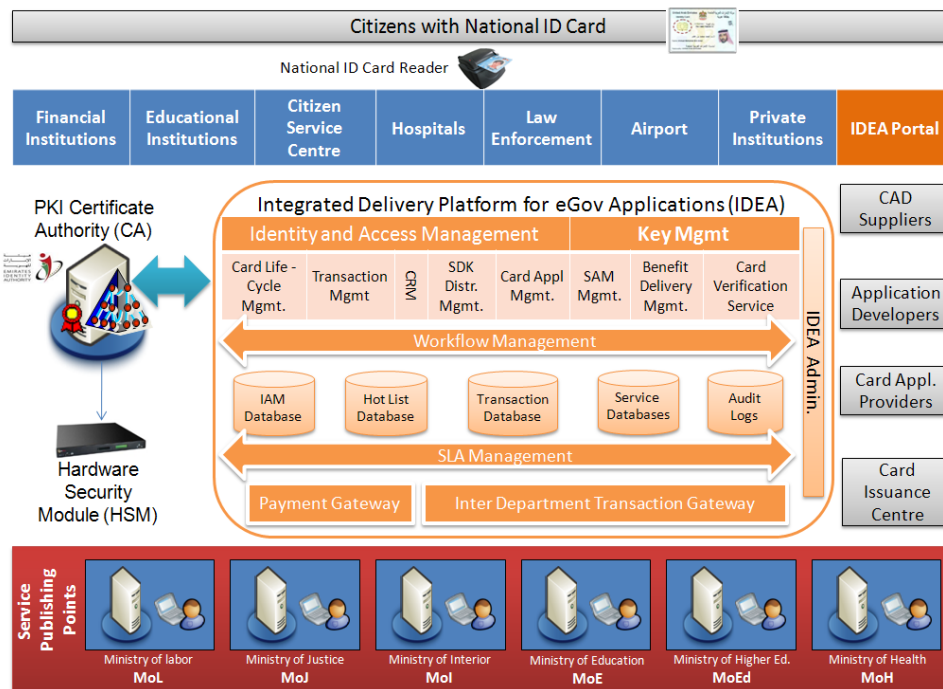


Figure 17: ID Card solutions architecture

7. Supporting e-Government

Development of a national population infrastructure should consist of enabling the basis for online authentication of users. It should address the overall requirements of trust, identity management and privacy and in the context of electronic governance. The federated identity management initiative was designed to facilitate implementation of e-Government services within the United Arab Emirates. This is envisaged to support advanced development of e-government specifically in areas related to e-inclusion and e-participation, as well as the end-to-end integrated government work processes.

8. Customer Service Orientation

Given the challenges the UAE ID card program is facing, it is confronted with key building blocks represented accelerating enrolment rates, meeting stakeholders expectations, improving quality of service, etc. The new organisation thinking as explained above shifted more towards a customer driven business organisation. The aim was to positively embrace a customer focused culture, where core competencies are identified and developed to

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deliver value for customers. A customer service standard was developed based on guidelines specified in the International customer service institute [3]. This focus area described a management culture that emphasised centrality of the citizen or customer in the process, as well as accountability for results.

This section concluded the change management program and the enrolment strategy overview developed at Emirates ID. The next section presents some key management consideration areas that require management attention.

9. Management Considerations

9.1 Change Management and Communication Plan

Change management as a discipline has grown tremendously over the last few years in the Gulf region. Our close interactions with government organisations in the region show us that a large number of public sector organisations used consultancy firms to develop and implement structured approach to managing change programs.

Indeed, a carefully planned change management program is imperative to the overall success of any strategic endeavour. Figure-18 shows that the success of a change program is determined by the awareness of the involved individuals or groups of the need and objectives of the change program. A change program is likely to be associated with vagueness, rumors, distrust even among those involved in the change process. Strong and consist leadership is needed to draw a clear path and set out performance and expectations of outcomes.

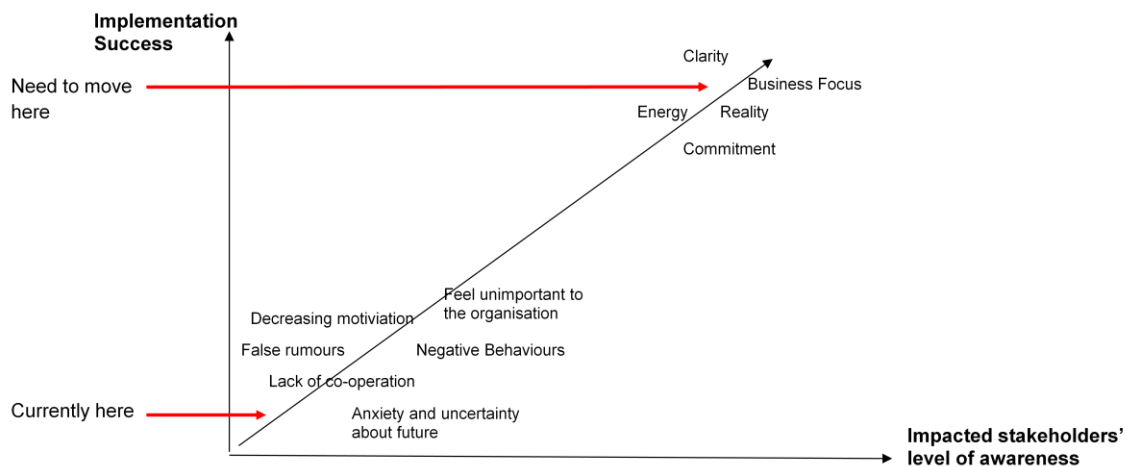


Figure 18: The need for clear communication plan

Management would prefer to implement change and expect least resistance and with the most buy-in as possible. For this to occur, change must be applied with a structured approach so that transition from one type of behaviour to another organisation wide will be smooth. Management need to carefully assess employees' reaction to an implemented change and attempt to understand the reaction to it. Although change programs are implemented to achieve organisational goals and objectives, certain changes do sometimes produce tremendous amount of resistance at several operational and management levels. Management is expected to provide support throughout the process of these changes, which are at times very difficult. Managing changes especially in public sector organisations requires a broad set of skills like political, analytical, communication, people, system, and business skills.

9.2 Organisational Development Principles

Due to the enormous pressure on management to create value and bring out tangible results, it is easily found that we get distracted with day to day operations. A commendable framework management need to always keep in mind

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is the EFQM model (see also Figure 19). The model was found to sustain a management focus on key governance perspectives. It is a good management assessment tool to measure the strengths and improvement areas of an organisation across all business operations, and to define the organisation's capability and performance.

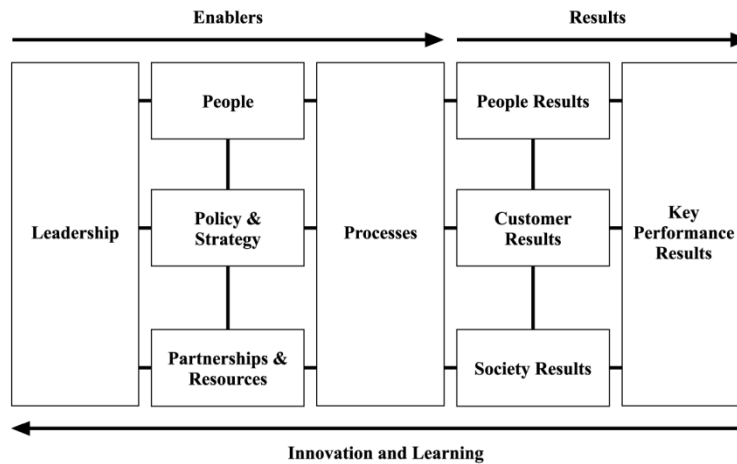


Figure 19: EFQM excellence framework

The three main elements that were considered crucial to the success of the overall organisation strategy were: (1) to become a result driven organisation, and focus on (2) employing and developing highly qualified and trained staff, who should enable and promote (3) creativity, innovation and learning organisation culture. The framework supported management to rethink values, policies, and controls and a restructuring that reflected a renewed sense of mission.

9.3 Management Dash Board

It is important for management to develop a dash board that gives an overview of the strategy and projects status. The use of simple graphical charts and maps, make it easier for management to understand and interpret business information, rather than wading through masses of numbers and spreadsheets. The management dash board need to be real-time reporting, to support executives and managers take actions at the first sign of a problem, instead of waiting for monthly or quarterly meetings or reports.

The management dashboard need to some degree to include drill-down capabilities, to reveal more associated graphs and breakdowns. Developing an electronic KPI dashboard as an active organisational messaging platform, should increase the visibility of key performance indicators for informed decisions that should in turn improve overall performance.

9.4 Users training

User training is a critical success factor for. The routine nature of work at registration centres caused a shortage of workers with the necessary skills to cope with the rapid growth and expansion of centres. This shortage forced the organisation to continuously hire and train new employees who lack adequate technology skills, and to accept the chore of constantly retraining present employees.

In ID card schemes, fingerprint quality has huge impact on the identification/verification system. Therefore, and to meet these challenges, organisations need to develop a system to manage end-user training, and focus to enhance fingerprint capture quality.



Figure 20: Common views of public about ID card schemes

National ID schemes have been a very much subject to controversial debate on international levels [4-8]. It is seen by privacy advocates to be a *'massive invasion'* of their liberty and freedom rights, and promotes the concept of setting up *'big brother'* or *'big government'*. It was therefore important for the organisation to develop a social media marketing strategy to better understand community interests by running customer and market surveys within the social communities, and promote engagement and social participation into the project value proposition.

The second component of the media strategy was related to building visibility about the program through information sharing and interactions. The communication strategy included specific aspects that considered the cultural diversity of the target society (eg. *multiple language communication, information leaflets etc*).

10. Conclusion

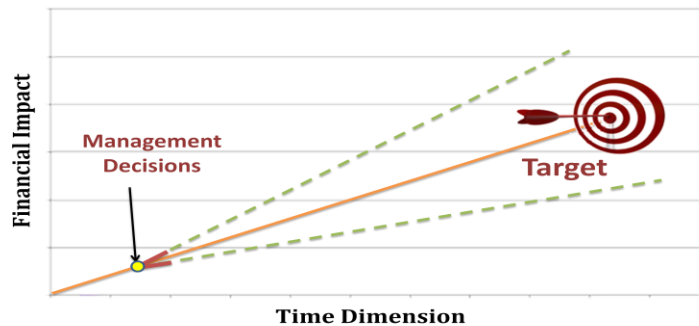


Figure 21: Impact of unfocused management decisions

Without a clear blueprint and plan, organisations are more likely to drift and run in different directions. Management critical decisions that are not based on solid understanding of impact and well-deliberated calculations will most probably yield to an unknown outcome [see also 9, 10]. Public sector projects are to a great degree involve risk and uncertainty.

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This article was written in an attempt to reveal some of the challenges experienced in the implementation of a strategic and large scale government program. National ID schemes and due to their size and complexity need scrupulous planning to achieve their audacious goals. Population enrolment in such schemes is considered a challenging chore. The presented case study expounded how the UAE government reacted to this challenge.

Though it could be argued that population size in the UAE is lower than many other larger initiatives in other countries, the presented approach in this article is believed to provide a virtuous thinking path to address similar issues. Besides, the presented management consideration areas are assumed to be important knowledge building blocks for those in the field to address fundamental organisational and project management rudiments.

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