



'Musharka' Knowledge Management

Case Study v1.0



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1. Executive Summary

LINK Development, an OT Ventures portfolio company and leading software and services company in the Middle East, has proudly worked on the Abu Dhabi Department of Municipal Affairs Knowledge Management framework, aiming at radically transforming the current government information systems in place. As a software development company with over ten years of experience in the region, LINK Development has worked with the Abu Dhabi Department of Municipal Affairs to establish the knowledge sharing platform, so that information is easily availed when needed for all the employees in DMA and its different municipalities, which up to this point have been rendered completely unconnected.

We designed, developed and integrated three municipality-specific intranets, not existing prior to the KM project, implemented as internal information sharing platforms equipped with state of the art collaboration tools and self-service capabilities, to increase efficiency, promote internal collaboration and increase employee efficiency. We additionally created common pools of knowledge to share best practices and relevant info across government bodies, as well as integrating the portals with all backend systems to avail internal eservices.

The portals include many community tools, such as blogs, wikis, discussion forums and calendars, while community management leaders ensure information accuracy. They also bring together different information sources such as peoples and skills directory, news, alerts and feeds from external sources. We built the different document workflows allowing employees to submit documents that are automatically indexed according to a well-defined governmental taxonomy and reviewed by the knowledge area owners.

LINK Development has played a leading role in implementing the knowledge management solution, as well as integrating it with the different back-ends and the various municipalities. We worked on delivering an advanced search functionality integrating Fast Search with the Smart Logic semaphore ontology engine, to provide a comprehensive search into the various information sources and increase information visibility and reachability, bilingually English and Arabic for the first time.

2. The Knowledge Management Solution

2.1 About DMA

The Department of Municipal Affairs (DMA) of the Emirate of Abu Dhabi was established in May 2007 and replaced the Department of Municipalities and Agriculture to act as the main focal point of all municipal planning to oversee public works project in the Emirate of Abu Dhabi. DMA aims to produce efficient service and higher citizen satisfaction in accordance with the national policy agenda which represents a new era in municipal services that would put the government of Abu Dhabi among the top five governments in the worldwide government ranking.

DMA acts as a regulatory body that supervises the three regional municipal councils in Abu Dhabi; Abu Dhabi Municipality, Al Ain Municipality and Western Region Municipality. To achieve excellence in municipal service the collaboration and knowledge sharing between the four entities is crucial, thus the existence of a fully-fledged knowledge management framework is invaluable for DMA and its municipalities.

2.2 Knowledge Management Framework Overview

In the course of analyzing, designing and implementing the framework Link development has cooperated with Mouchel, one of the world top consulting agencies in the field of governmental management. Moreover, Link development shared smartlogic, one of the world leaders in taxonomy management and automatic classification, in developing its first Arabic taxonomy that was utilized in DMA KMF.

The knowledge management framework is build round four main pillars:

1. Improving the employees collaboration by opening several collaboration channels for cross and intra municipal communication
2. Creating user friendly knowledge sharing tools
3. Structuring and organizing DMA and its municipalities knowledge base via automated knowledge classification tools and based on a well-defined governmental ontology that fits within DMA's context
4. Automating the business processes through a complete E service solution that is integrated within the knowledge management framework

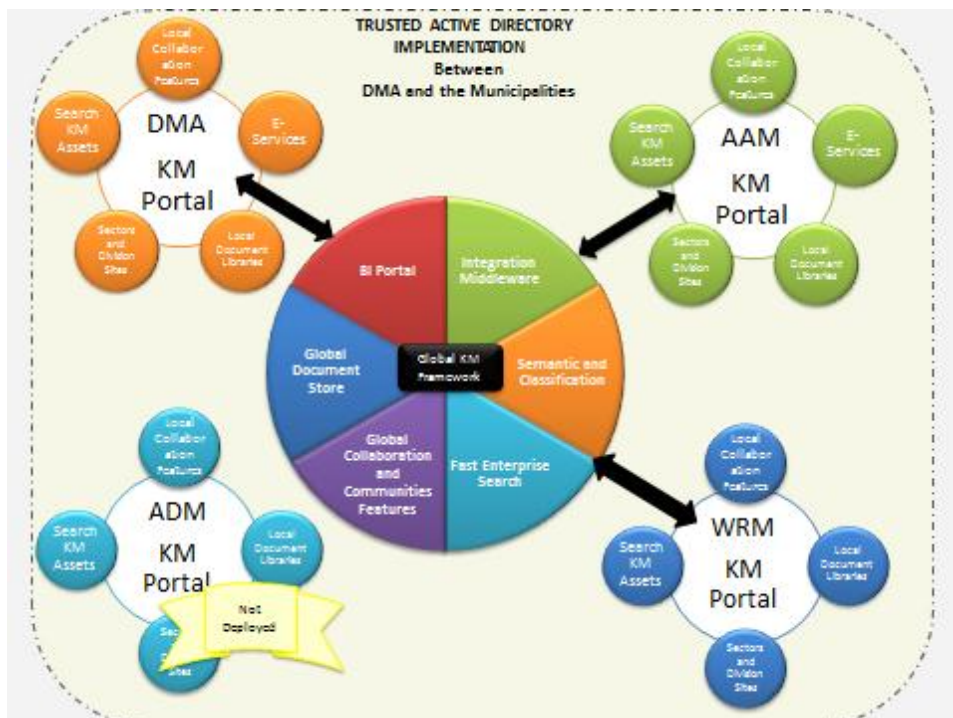


Figure 1: KMF Solution Overview

2.3 Knowledge Management Framework Solution Details

KMF includes a shared knowledge base which represents all the information that is shared across DMA and its three municipalities (ADM, AAM, and WRM) and entity specific knowledge base that represents the information that is localized to a certain municipality.

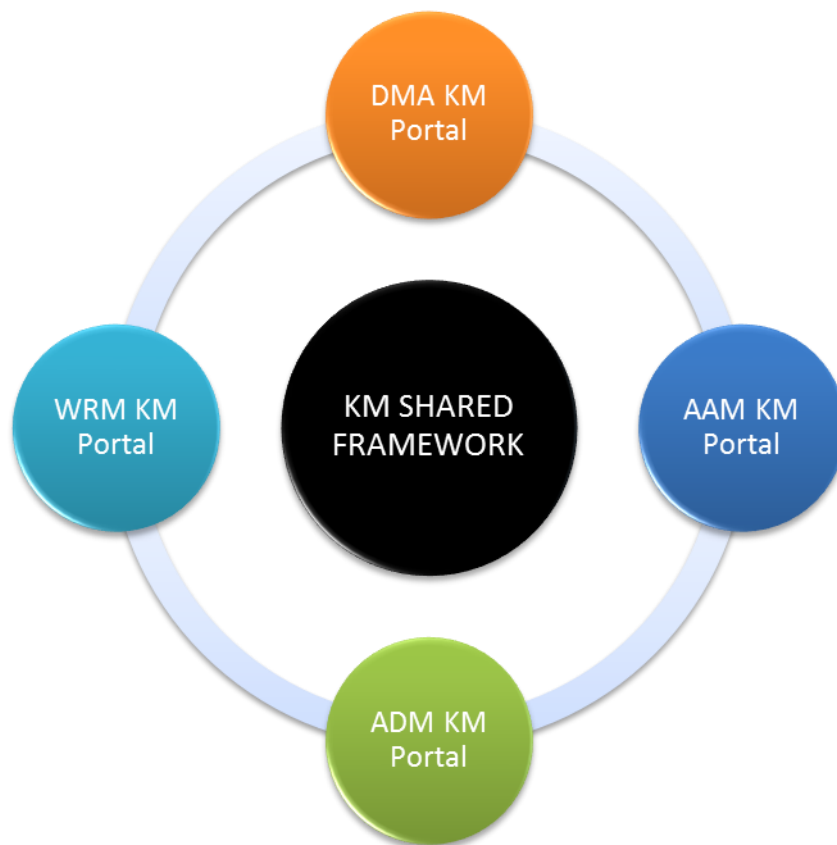
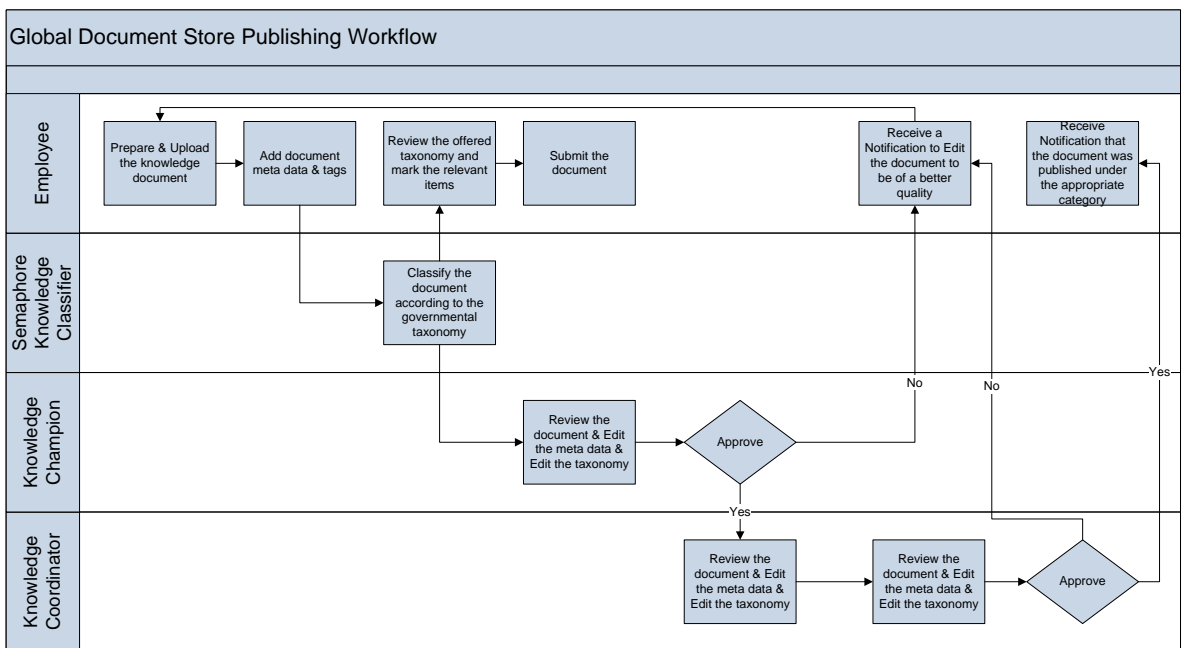


Figure 2: Shared KM Base versus Entities KM Bases

The shared knowledge base that shall include the following features:

- Global document store;** this document store acts as the main document repository where all entities employees can publish important documents in English and Arabic for sharing across the organization. The documents will be monitored through an efficient approval cycle that guarantees the uploaded documents are up to standard and incorporates accurate and important data. The published documents will be automatically indexed and classified under the appropriate knowledge class using smartlogic classification engine and according to a well-defined governmental taxonomy that is appropriate to the municipal context.



The above figure shows how a knowledge document makes their way to the right categories of the knowledge base

- Global newsletters;** these are electronic newsletters published for all employees belonging to all the entities. Any employee belonging to any entity will be able to subscribe to newsletters topics that interest them or view the list of all issues under different topics in the global newsletters repository. The purpose of the newsletter is to act as a means of pushing important information about a certain topic that employees across the different entities are interested in it

- **Global communities;** the global communities are collaborative spaces for members of common interest or certain domain of expertise coming from different entities to share ideas and transform useful information about their interest or expertise domain. Communities have a powerful membership management tool to make sure that each community includes the appropriate members with the right privileges. A community consists of several collaboration tools as follows:
 - List of Members in the community and their contacts
 - Community Discussion Forums
 - Community Wikis
 - Community Blogs
 - Community Newsletters
 - Community shared workspace (a shared document base for members of the community to share their knowledge)

- **People & skills directory;** the people and skills directory is a directory of profiles for all employees belonging to the different entities. This directory will focus on people's skills and experience. The purpose of this directory is to help employees find domain experts or formulate a new team with members having a specific skill which is an important enabler for knowledge sharing.

- **Global News;** this section have the news of interest to all the entities employees, the news information comes from different entities and even from external sources and are automatically classified according to the governmental taxonomy, however the knowledge champions (who are specific employees responsible for enhancing knowledge sharing and structuring across all entities) can edit the classification.

- **Global FAQs;** the frequently asked questions are divided into topics of questions which are of interest to all the entities employees. Each topic will have its list of questions and their corresponding answer. The purpose of this feature is to help employees especially the ones interacting with citizens to find answers to critical questions they might face.

- **Global BI Site;** The KMF empowered with a BI tool. The purpose of enabling BI within the solution is to provide decision makers with a tool to help them make informed decisions. The categories of information that are of interest to the entities decision makers are:
 - CRM information about the municipalities and quality of service offered
 - Information about the progress of knowledge sharing between employees (e.g. number of documents uploaded)

- **Search Tools;** the framework is empowered with advanced search capabilities that incorporates MS FAST search capabilities and a semaphore classification based on the governmental taxonomy. The search results incorporates ;
 - A summary for each search result generated by FAST enterprise search engine and the keywords used in the search highlighted enabling the user to view the highlighted terms definition as per the taxonomy
 - Taxonomy navigator; having the terms and the hierarchies on the portal and highlight the categories that the search words are within, as well as similar searches and suggested items

The screenshot shows a search results page for the Department of Municipal Affairs. At the top, there is a search bar with the text 'knowledge management' and a search button. Below the search bar, the page is divided into three main sections:

- Taxonomy:** A hierarchical tree structure on the left side, categorized under 'English'. It lists various business functions such as 'Human Resources (63)', 'Performance Management', 'Public Relations (16)', 'Information Technology M...', 'ICT services', 'Configuration manag...', 'Computer applications', 'Discussion forums (1)', 'IT Planning (8)', 'Quality Management (8)', 'Legal Affairs', 'Legislation (7)', 'Performance management (6)', 'Quality management (10)', 'Best practice (12)', 'Performance measurement', 'Performance indicators', 'Strategic Planning (51)', 'Operational Planning', 'Urban Planning (37)', 'Area Services', 'Environment', 'Energy and fuel', 'Renewable energy (', 'Environmental protecti...', 'Climate and weather', 'Property Management (11)', 'Planning (12)', 'Urban development (11)', 'Land and premises', 'Land management (12)', 'Non-residential property', 'Business premises (6)', 'Industrial propert', 'Municipal Infrastructure & Ass...', 'Public Sanitation (9)', 'Municipal Business Units', 'Support Services Sector', 'Legal Affairs (34)', 'General Manager's Office', 'General Manager (13)', 'Property Management Sector', 'Property & Spatial Mapping', 'Town Planning Sector (7)', 'Location', and 'Al Ain Municipality (10)'. There are 'Expand All' and 'Collapse All' buttons for this section.
- Search Results:** The central section displays the search criteria 'knowledge management' and shows 'Results 1 - 10 of about 3996'. It lists several search results, including:
 - KM_ICG_Charter_En**: Charter of Interface Coordination...Coordination Group? The Knowledge Management (KM) Project covers...Design Authority (DA) Knowledge Management Office (KMO) ...
 - Abu Dhabi Municipality | About Us | Our Values**: Values Leadership: Through encouraging innovation and adopting recent management techniques...Quality: Guarantee implementing and communicating quality concepts to provide unique...
 - Department Of Municipal Affairs - MUNICIPAL EMPLOYEES LEAD KNOWLEDGE SHARING**: ...Strengthening the culture and concept of knowledge management across the DMA, the municipalities...Abu Dhabi to launch a Knowledge Management (KM) framework...to establish the concept of knowledge management. Events such...
 - The General Secretariat of the Executive Council - Abu Dhabi - Government News**: ...Launches "Musharaka" the First Knowledge Management Framework within Government...entity in Abu Dhabi to launch a Knowledge Management (KM) framework...of the DMA explained: "Knowledge Management starts by creating a more collaborative..."
 - The General Secretariat of the Executive Council - Abu Dhabi - Government News**: ...successful year of operations under Musanada's management with the testimony of its users...discussion covered diverse topics such as information management, knowledge management and continual improvement in technology...
 - KM ToR**: Owner : SA AlMeharbi ... Community of Practice Knowledge Management: DMA Central Knowledge Management Office 2 ...Next Steps Objectives Knowledge Management CoP ToR 3 ...
 - The General Secretariat of the Executive Council - Abu Dhabi - Government News**: ...2010 DMA Organises 4th Knowledge Management Seminar ...hosted yesterday its Fourth Knowledge Management Seminar to strengthen the culture and concept of knowledge management across the DMA and the Municipalities...
 - The General Secretariat of the Executive Council - Abu Dhabi - Government News**: ...based Economy (KEE), and Knowledge Management- Public Sector Leading Role...government in the innovation and knowledge management sector, the workshop...the role of innovation and knowledge management in the creation of the foundations...
 - The General Secretariat of the Executive Council - Abu Dhabi - Government News**: ...DMA Launches "Musharaka" the First Knowledge Management Framework within Government Entities Promoting free flow and sharing of information and knowledge amongst employees to create customer service advocacy...
 - The General Secretariat of the Executive Council - Abu Dhabi - Government News**: ...DMA Organises 4th Knowledge Management Seminar The Department...hosted yesterday its Fourth Knowledge Management Seminar to strengthen the culture and concept of knowledge management across the DMA and the Municipalities...
- Definition:** A section on the right side titled 'Definition' which provides a detailed explanation of Knowledge Management (KM), stating it 'comprises a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizational processes or practice.'

At the bottom of the search results section, there are navigation buttons: '1', '2', '3', '4', '5', and 'Next'.

Figure 3: Search page

- **Integration Middleware;** this is a tool that provides different entities and even external organizations to publish Knowledge Documents , KPIs related data and general content items, the data provided through the integration middleware are categorized and structured automatically under the relevant sections of the shared knowledge base according to the governmental taxonomy used for DMA and its entities

For the entities knowledge bases (which is represents through localized knowledge management portals that are only viewed and accessed by members of this specific entity (e.g. Al Ain Municipality knowledge management portal) they mainly consist of;

- **Dynamic Organization chart;** showing the structure of the entity and interleaved with the people and skills directory of people under the entity for each of finding expertise in the entity
- **Entity Values;** which is a repository for the entity values and codes of ethics
- **Local News;** this are new of interest to the entity
- **Collaborative tools;**
 - Surveys
 - Polls
 - Discussion Forums
 - Local community available for the participation of employees of the entity solely
 - RSS feeds
 - Alerts
 - Calendar of Entity Events
- **Process automation tool;** which is a powerful E services tool consisting of :
 - A workspace for each employee that summarizes his requests, their status, the tasks pending on his action and the actions of the his subordinates
 - A notification engine that sends employees notifications about their requests and their delayed tasks as well as their delayed subordinates tasks using email and sms notifications
 - Financial Services; which automates most of the processes and the workflows related to the financial department (e.g. allowance, bank statements , salary transfers)
 - Facilities Services; which automates most of the processes and the workflows related to the facilities department (e.g. business cards, reading material, meeting room reservations, events facilitation)
 - Training Services; which automates most of the processes and the workflows related to training department (e.g. training request, skills updates)

2.4 Physical Design Aspect

One of the important challenges that faced the solution was that important systems were dispersed across DMA and its municipalities. The solution had to integrate the active directories of DMA and the three municipalities under it. The shared knowledge base had to be integrated seamlessly within each entity knowledge base so the solution had to read all the information in the shared knowledge base and integrate it within the relevant sections of the local KM portal of each entity with the same look and feel of the entity KM portal to make the user experience homogenous and let the employee focus on getting the appropriate information from the different knowledge bases (the shared knowledge base and his local entity knowledge base).

The below diagram represents the physical technologies structure of the Musharka solution

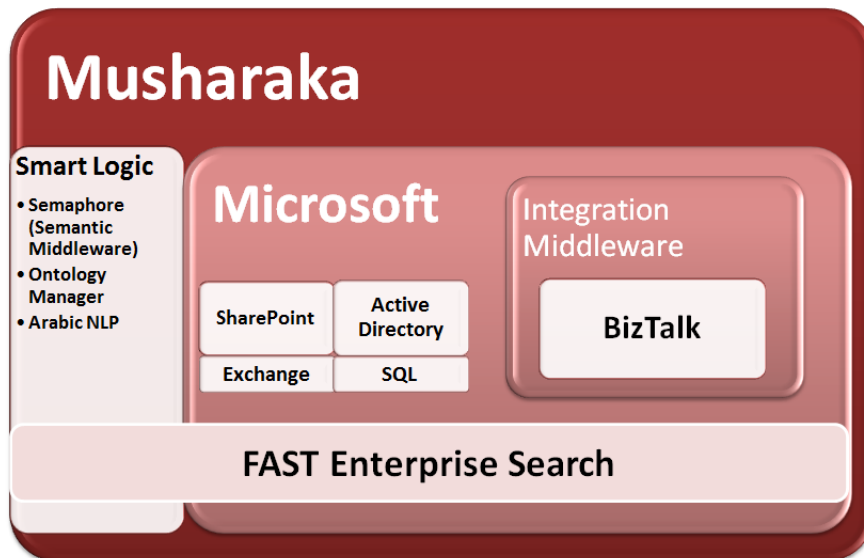


Figure 4: Technology Diagram

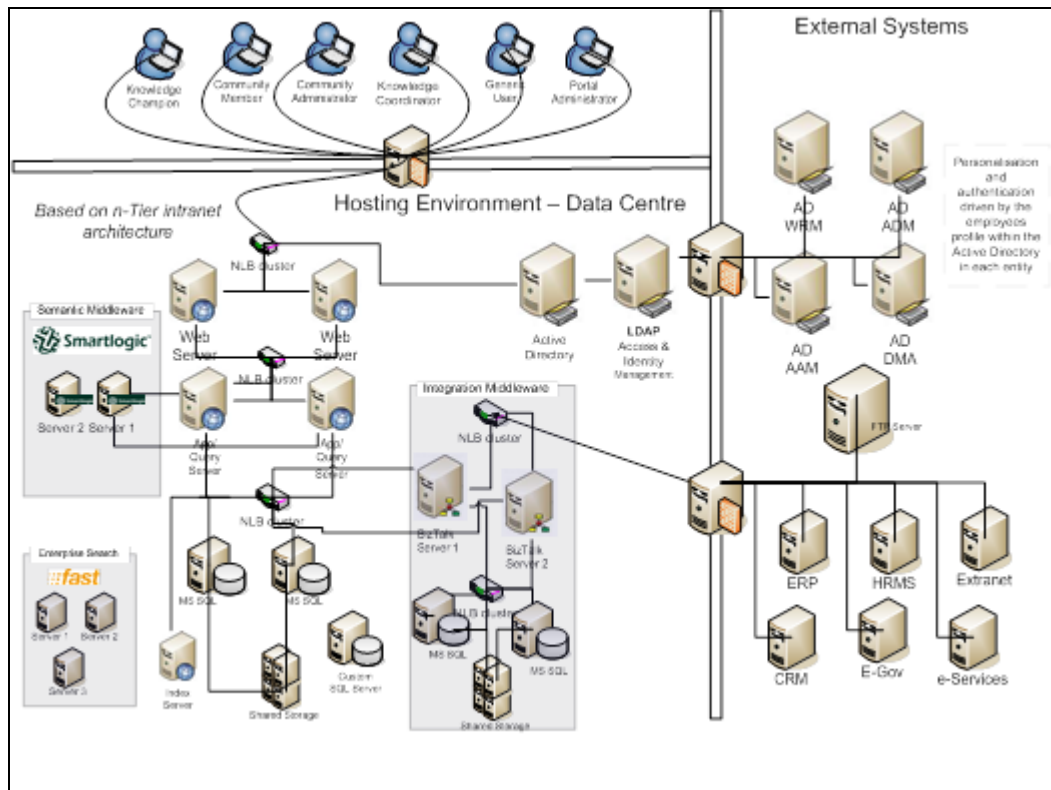


Figure 5: Servers Architecture

2.5 The Expected Results

The Knowledge management framework is expected to achieve the following results:

1. Increase the knowledge sharing across municipalities and within each municipality by 150% through interacting with the Global document store, FAQs and communities of practice interest, Global and local News, RSS feeds and announcements. Thus, increasing the experience of employees across the different sections and on the long run reduce the cost of training and knowledge acquiring with DMA and its municipalities
2. Improve the processes handling efficiency by 100 %, it is expected that with the new E services introduced for each entity will reduce the time of each employee working on the automated service by 50 % and reduce the human mistakes that used to happen within the course of the service workflow by 50 % as well
3. Increase the citizen satisfaction by 100 %, it is expected that through the enhanced knowledge sharing, the advanced search capabilities, the interacted FAQs and the people and skills directory the employees confronting the citizens at the different entities will be easily able to respond to citizen enquires and requests.