GOVERNMENT OF MAHARASHTRA

TRANSFORMING EMPLOYMENT
THROUGH INFORMATION TECHNOLOGY

"Rojgar Mitra
Application Software & Others"

Documentation Supported by:
Ministry of Personnel,
Public Grievances and Pensions
Department of Administrative Reforms &
Public Grievances
Government of India
March 2012

Directorate of Employment and Self-employment, Government Of Maharashtra
Korlik Bhan, 3rd Floor (Annex), CBD Belapur, Navi Mumbai-400416
Tel. No.: 022-27573544 / 27573542 Fax: 022-27573556
E-mail: doe.askp@gmail.com Website: http://www.maharashtra.gov.in
This Professional Document covers the study of automation of Employment Exchanges in Maharashtra state. It mainly deals with the description of two software's viz. Rojgar Wahini Web Portal and Rojgar Mitra Exchange application. The document includes the study of Employment Exchanges situation before computerisation, the technologies adopted in this gradual growth, challenges faced by the department and how the software's are sustainable till date.

The intention behind writing this document is to provide easy understanding of all the steps taken by the department towards the citizen centric computerisation.

The simplicity of the document has been a major factor kept in mind during the compilation of the document. We are sure that the document will serve the purpose of replicability of the software's in other states.

The document is designed in such a way that the readers can go with step by step understanding of actual scenario behind writing this document.

DE&SE-IT Initiatives
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HISTORY OF THE DEPARTMENT</td>
<td>1</td>
</tr>
<tr>
<td>ORGANISATION STRUCTURE</td>
<td>3</td>
</tr>
<tr>
<td>SITUATION BEFORE COMPUTERIZATION</td>
<td>8</td>
</tr>
<tr>
<td>SITUATION AFTER IMPLEMENTING THE ROJGAR MITRA &amp; ROJGAR WAHINI SOFTWARE</td>
<td>10</td>
</tr>
<tr>
<td>TECHNOLOGIES ADOPTED</td>
<td>16</td>
</tr>
<tr>
<td>NEW PROCESSES</td>
<td>20</td>
</tr>
<tr>
<td>CHALLENGES FACED &amp; STRATEGY ADOPTED</td>
<td>23</td>
</tr>
<tr>
<td>SUSTAINABILITY OF THE APPLICATIONS</td>
<td>26</td>
</tr>
<tr>
<td>TANGIBLE &amp; NON-TANGIBLE GAINS</td>
<td>29</td>
</tr>
<tr>
<td>LEARNINGS DERIVED</td>
<td>32</td>
</tr>
<tr>
<td>REPLICATION</td>
<td>33</td>
</tr>
<tr>
<td>LIMITATIONS OF PRESENT SYSTEM</td>
<td>34</td>
</tr>
<tr>
<td>THE ROAD AHEAD</td>
<td>36</td>
</tr>
</tbody>
</table>

**ANNEXURE:**

<table>
<thead>
<tr>
<th>Annexure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1 Portal Screenshot</td>
<td>38</td>
</tr>
<tr>
<td>A-2 Portal Usage Statistics</td>
<td>39</td>
</tr>
<tr>
<td>A-3 Rojgar Mitra Exchange Application Screen Shots</td>
<td>40</td>
</tr>
<tr>
<td>A-4 Project Recognition</td>
<td>43</td>
</tr>
</tbody>
</table>

DE&SE-IT Initiatives
1. HISTORY OF THE DEPARTMENT

1.1. The Employment Service came into existence in India under the stress of post war demobilization. Towards the end of the Second World War, the need for a machinery which could handle orderly reabsorption of civil life, of a large number of service personnel and war workers who were about to be released was keenly felt. Having regard to the complexity of the problem and in order to ensure uniformity in policies and effective co-ordination of efforts, it was considered necessary that the proposed machinery be directed and controlled by the Central Government. In accordance with a scheme that was agreed upon by the Central and State Governments, the Directorate General of Resettlement and Employment (D.G.R&E) was set up in July 1945 and Employment Exchanges were gradually opened in several parts of the country.

1.2. Till the end of 1946, Employment Service facilities were restricted to demobilized service personnel and discharged war workers. In 1947, consequent upon the partition of the country, the Employment Exchanges were called upon to deal with the resettlement of a large number of persons who were displaced as a result of partition. In response to popular demands, the scope of the service was gradually extended and by early 1948, Employment Exchanges were thrown open to all categories of applicants.

1.3. This transition of the Employment Service from a resettlement agency to an all India placement organisation resulted in an enormous increase of work, which called for long-term measures. It was felt that the organisation which was hurriedly set-up to tackle the immediate problem of resettlement of released war service personnel, required to be restructured if it was to function as effective machinery which could facilitate and further the employment process. Accordingly, the Committee (popularly known as Shiva Rao Committee) was appointed in 1952 under the

DE&SE-IT Initiatives
chairmanship of Shri B. Shiva Rao to review the set-up and functions of the Employment Services and to make recommendations for its reorganization. The Committee submitted their report in 1954 which was mainly responsible for the present structure of the organisation and diversification of its functions in the field of Occupational Research, Vocational Guidance and Employment Market Information. Based on the recommendations of the committee, the day-to-day administration of the organisation was handed over to the State Governments with effect from 1st November 1956.

1.4. The Government of India had also appointed in March, 1978, a Committee on National Employment Service under the Chairmanship of Shri P.C. Mathew (popularly known as the Mathew Committee) to examine the various aspects of the Working of Employment Exchanges, and to suggest suitable measures to make it more responsive to changing circumstances and needs. This Committee submitted its report in November, 1978 and suggested a number of recommendations for improvement of the Employment Service. Some of the recommendations suggested by this committee have been accepted by the Government for implementation.

1.5. The Employment Service is now the joint responsibility of the Central and State Governments.
2. ORGANISATION STRUCTURE

2.1 Roles and Functions of the Department

The Commissioner of Employment, Self Employment and Skill Development is the head of the Employment Organization in the State. It is basically a regulatory body that ensures effectiveness of work, implementation of policy & procedures and takes appropriate action to bring about necessary improvements in the employment scenario. Broadly with four Sections i.e. Exchange Section (Registration / Submission / Recruitment / Placement), Employment Market Information Section, Vocational Guidance Section, and Self-Employment Information Section are the key activities of Employment Exchanges. The Employment Exchange present in different pockets of the State carry out the activities of Job Seekers and Employer registration, Submission and Placement, Vocational Guidance, Collection and Compilation of Employment Market Information, Interpretation of Statistical Data, Job fairs, Employment Promotion programme, Co-operative Sewa Societies of un-employed youth, Career Library etc. Inspections of

DE&SE-IT Initiatives
attendance role & recruitment records of establishments to ensure the compliance of the provisions of the Employment Exchange (Compulsory Notification of Vacancy) Act 1959 and Rule 1960 also forms one of the key activities.

Broadly the main primary routine activities are:

i) Registration of names of applicant for placement assistance
ii) Submission / sponsorship of names against notified vacancies.
iii) Vocational Guidance for unemployed youth for employment/self-employment
iv) Collection and Compilation of Employment Market Information

The Department registers establishment to sponsor names of eligible candidates against vacancies notified by the employers, enforces the Act by way of inspection of different establishments i.e. Private and Public Sector organizations and promotes awareness of employment/self-employment activities among prospective candidates. Manpower information of the establishment is being collected by the quarterly ER-I and bi-annual ER-II return.

Emphasis is given on creating awareness among job seekers to take up Self Employment with the help of all govt agencies like District Industries Centres, KVIC, DRDA, other state govt corporations etc. For successful organisation of recruitment rallies for Defence & Para-Military Services logistic support is being extended by the State Government by providing accommodation to the recruiting team, transport facilities Medical coverage, maintenance of Law and order etc. Massive Publicity measures are taken up in the remote areas of the State through different agencies in order to ensure maximum representation. Apart from the publicity made through print and electronic media, intimations are sent to all Panchayats. A standard operating procedure has been formulated for smooth organization of these rallies.

The organization has been providing Vocational Guidance to job seekers and student through Career Talks, Career Conferences, Career Exhibitions,
publication of career bulletins, dissemination of information on different careers and self employment ventures etc. To promote vocational guidance activities in the state, Employment Exchanges are delivering information pertaining to career and motivating the students for self-employment. Also DESE is conducting Campus Interviews to assist candidates to pursue jobs through 'Rojgar Melava' programme.

2.2 Responsibility of the Department:
The responsibilities among this department are distributed as described below:

a. Directorate of Employment Self-Employment
b. Divisional Head Quarters
c. District Employment & Self Employment Guidance Centres
d. Employment & Self Employment Guidance Centres (Technical)
e. City Employment & Self Employment Guidance Centre
f. Employment & Self Employment Information and Guidance Centres for Schedule Tribes
g. University Employment & Self Employment Information and Guidance Bureau (UEI&GB)
h. Employment & Self Employment Guidance Centre for Physically Handicapped persons

a. Directorate of Employment Self-Employment:
This is acting as a Head Office of this organisation in Maharashtra State; who is responsible for the Implementation of Policies; governing the Smooth working of Employment Exchanges as per the directions & guidelines of Government of Maharashtra, as well as Government of India.

b. Divisional Head Quarters:
These offices act as controlling & supervising body for the all the Employment Exchanges within their geographic regions (divisions). There are Six divisions in the state of Maharashtra, which are Mumbai, Pune, Nagpur, Aurangabad, Amravati and Nashik. These head quarters are
responsible for smooth working of Employment Policies within their jurisdiction.

c. District Employment & Self Employment Guidance Centre:
The district centre is normally constitute the basic unit for implementing and coordinating all Programmes of employment assistance, career guidance, employment market information and surveys and studies in the district. The District Employment Officer is responsible for inspection and enforcement of the Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959.

d. Employment & Self Employment Guidance Centres (Technical):
There are two technical employment exchanges located at Mumbai & Pune. These exchanges are established separately to serve technically qualified candidates, such as Diploma, ITI etc.

e. Special Employment & Self Employment Guidance Centres:
These Employment Exchanges are working for specific area located at Kamathi, Nagpur and Panvel, Navi Mumbai. These exchanges are established separately to serve candidates belonging to the jurisdiction of their City/taluka only.

f. Employment & Self Employment Information and Guidance Centres for Schedule Tribes:
There are eight Tribal Exchanges in the state. These exchanges are working for employment assistance and career guidance to the candidates from tribal area. Tribal Exchanges are conducting the coaching classes for preparation of competitive exams and offers stipend to the trainee candidates after completion of training/coaching with study material i.e. a set of books to prepare for the different competitive exams.

g. University Employment & Self Employment Information and Guidance Bureau (UEI & GB):
There are six university employment offices established across the state in the campus of University. These exchanges are established separately to provide employment assistance & career guidance to the candidates
acquiring higher and professional qualifications such as BE, B.Tech, MBBS, LLB, M Pharm, MA, M.Com, MSc, MPhil, PhD etc. These exchanges have jurisdiction of respective district area belonging to their respective University.

h. Employment & Self Employment Guidance Centre for Physically Handicapped persons (PHP):

Maharashtra state has one of the special Employment Exchanges situated at Mumbai to provide employment assistance & career guidance especially to Physically Handicapped candidates having jurisdiction of Mumbai City & Suburban districts.

DE&SE-IT Initiatives
Employment was one of the biggest challenges in post-independence India. The government opened employment exchanges in the interest of national growth and societal development. In the early days, with computers yet to be invented, employment exchanges had their own manual procedures as described below.

3.1. The first step in the process was Candidate Registration - the candidate had to start by a registration form (i.e. X.1) which was in the form of Envelope. By filling up this form (which covered all qualifications, experience, backward class caste category and priority, if any) with attested photo copies of original documents attached to it, he/she submitted it to Employment Exchange. After a successful manual verification, he/she would receive the Employment card (post card size) with his/her unique id.

3.2. The employment exchange acts as a match maker between Candidates and Employers. In an essentially manual process, the employer needs to be identified by the employment exchanges and notify the vacancies occurred with them, whether the employer is a private, who comes in the preview of CNV act or public sector organisation. This activity is bounded by the CNV (Compulsory Notification of Vacancies) ACT 1959 & rules 1960.

3.3. In the pre-computerisation era, this process was carried out on a First Come First Serve (FCFS) basis, i.e. when the applicant registered himself/herself, the application enclosed in the pocket X-1 having both side information filled up containing photo copies of relevant documents, was kept in a rack and was used for sorting the applications. There were multiple labelled racks kept in the Exchange and the application was stored with seniority of registration on the basis of following three levels,

- Occupation or Qualification
- Caste Categories such as SC, ST, OBC etc.
- Priority such as PAP, Physically Handicapped Ex-Servicemen etc.

Applications were kept in the main rack having label of Category, after which sorting of the applications was done on the basis of the Registration
seniority and thereafter on Qualification or Occupation basis.

Steps of Manual Submission:

1. Applicant registers his/her name in an employment exchange (EE)
2. The Employment staff member encloses documents of candidate in an envelope and writes the applicant's details like name, address, qualification, occupation (NCO), date of registration on both sides of the envelope.
3. Employer notifies the vacancies occurred to the Employment Exchange.
4. The EE staff member sorts the applications as per the eligibility criteria given by employer, depending upon the number of posts the employer has informed. The EE chooses 10 times extra applications i.e. if the employer has only 1 post the EE sends/chooses 10 applicants for the list to be sent to employer and requesting employers to call those candidates for an interview/Exam. It was very difficult, tedious and time consuming (approximately ten days required for finalizing one recruitment process) task to prepare the list of candidates by manual sorting to fulfill the requirements noted in the notification of employer as well as to act as per government rules of recruitment i.e. reservations, age relaxation etc.
5. After getting the result from employer EE takes placement entries in the records

Limitations of Manual Process:

There were obvious limitations in the manual process such as:

- The process was having too much complexity due to multiple factors included in the submission process.
- The process was time consuming, especially when thousands of records are being maintained.
- The process was prone to human errors.
- This was man power consuming process.
- The registration cards were stored manually & prone to misplace due to handling of EE employee for various activities.

DE&SE-IT Initiatives
4. SITUATION AFTER IMPLEMENTING THE ROJGAR MITRA & ROJGAR WAHINI SOFTWARE

During 1986–92, 117 employment exchanges out of the total 950 exchanges and UEIGBs (University Employment Information and Guidance Bureau) in India were computerised. In 1992–93, the central government had withdrawn their support to the project and the state governments continued with their computerisation effort as per their capacity. Maharashtra and Gujarat are two states where each exchange is computerised and data is available on their respective portals.

The role of the employment exchanges is continuously changing. The emphasis is shifting from mere placement to informing, advising and assisting the job seekers with central/state self-employment schemes and advising them on training geared towards self-employment. With this objective in mind, all the employment exchanges and UEIGBs in the state of Maharashtra have been computerised using the software Rojgar Mitra. With this software, the exchange carries out candidate registration, employer registration, candidate renewal, vacancy order booking and submission of candidate lists to employers and processing of Manpower data received in the quarterly return ER-I & bi-annual return ER-II. The Rojgar Mitra data base is built to integrate the exchange data at a central server.
The Rojgar Mitra is a client-server software for the day-to-day activities of Employment Exchanges and Rojgar Wahini (http://www.maharojgar.gov.in) is a public web portal. Both are developed for the Directorate of Employment and Self Employment (DE&SE) by the National Informatics Centre, Pune. Rojgar Mitra software is deployed at all the employment exchanges, while Rojgar Wahini is hosted at the central server on NIC Network at Pune. The portal facilitates online candidate registration, profile updating, and employer registration, filing EMI returns and searching for suitable candidates in the vast data of over 28 lakhs registered candidates.

This portal is a one-point online source of information about employment, vocational guidance and self-employment opportunities. A centralized repository is maintained of all unemployed candidates, such that, this data is readily available to employers nationwide/worldwide. The primary objective of the portal is to facilitate the 24 x 7 employment services to the candidates and employers. To keep d and informed to candidates Rojgar Wahini (RW) portal is having a SMS alert facility. Employments Statistics (ES) report generation becomes very easy and saved the time of EE staff. The pages of RW are designed using Unicode fonts. to be displayed in Marathi or English, as appropriate to the subject matter. The dynamic, portable, Unicode-enabled portal provides access to the data of lakhs of registered candidates. The design is such that it is possible to translate the portal into any Indian language with minor modifications.

The portal has five major sub-sites:
- Candidates' Corner
- Employers' Corner
- Self-Employment
- About Us
- Right to Information (RTI) and
- Kamgar Katta.

DE&SE-IT Initiatives
The Candidates' Corner provides registration, and transfer facilities to the candidates, viewing registration information, job advertisements, departmental contact details, bulk recruitment, advice on possible jobs and occupations and special information for disabled persons. Candidates/registered youth can access references relevant to job seeking, like coaching classes for competitive examinations, books, publications, newspapers, television and radio programmes.

The Employers' Corner provides information relevant to employers and the facility for easy registration; notify vacancy demand and submission of EMI returns. An employer can search the data of candidates registered with the exchanges in Maharashtra for suitable candidates as per their requirement.

The Self-Employment sub-site covers the self-employment guidance activities of the DE&SE, providing information, guidance and advice to the unemployed youth regarding all applicable self-employment schemes, small-scale businesses they can take up with their processes, details of documents, No Objection Certificates, licenses and permits required, agencies involved with complete contact details, and training details for the appropriate trade.

The Bankers' Corner advises on loans and related processes. Details of Non Government Organisations working for self-employment and details of Seva Societies registered with the department are also available. The portal gives the list of defaulters who have taken loans and not paid back.

About Us contains information about the organisational structure, role, responsibilities and the office locations of the DE&SE.

The RTI – Right to Information – sub-site contains the 17 proactive disclosures made by the department as per the Act. The contact details of the information officers of the department are also available.

Kamgar Katta – sub-site provides e-space for both i.e. service provider and service seekers. Here service providers can register their skills and can search demand for their service. Service seekers can register their demands and can search for the different service providers along with their contact details as per requirement. This help to minimize the gap between service providers and service seekers.
The portal consists of over 2500 PHP pages and 500 DB2 tables, containing over 30 GB of data. The portal is displayed in Marathi/English using Unicode fonts. The design is such that it will be possible to translate the portal into any Indian language without any extra programming. The work on the portal was started in April 2003. The portal in its current form has taking shape time to time. It is expected that the portal will keep changing as per the requirements of the users of the portal, i.e., the employers, unemployed youth and citizens at large.

Rojgar Wahini portal is an e-Governance application forming a link between Government to citizens (G2C). The portal also builds a bridge between the government to Government (G2G) and Government to business (G2B) through the Employer module.

Rojgar Wahini: Government and Citizens (G2C)
The Candidate module allows an unemployed person to register with a particular exchange on the web. It allows the candidate to request renewal of their registration, view and print their registration information, send a request for change of address and view their submission details. The portal publishes vacancy advertisements of departments of the Government of Maharashtra. Private and central government job advertisements are also displayed on the portal. Candidates can get guidance for competitive examination coaching classes, useful books and magazines, TV and radio programmes relevant for job search. One can also view Candidate submission list for any exchange for the vacancy notified after January 2003.

The grievance redressal related link gives contact information to a citizen about whom to call or write to for obtaining a service or placing a grievance.

Self employment sub-site provides information, guidance and advice to the unemployed/ opportunity seeking youth regarding Self Employment schemes, small scale businesses they can take up and training details.

The Employer Corner allows registering Employers to search the candidate database to find suitable candidates with the limit of 200.

There is a full sub site on the KTI proactive disclaimers giving all the applicable information, including employee contact details.
Rojar Wahini: Government To Business (G2B)

Employers can register with an exchange and their profile. Registered Employers can submit quarterly returns of Employer Market Information; they can post their vacancy order notifications for inviting applications from candidates.

The Portal is available through internet access. Candidate need not travel to an exchange and wait in a queue for his registration or renewal. Details about periodic bulk recruitment in government for the police, gram sewaks are displayed. Candidate can download various application forms. The services that are available at the exchange are now available on the web. The portal is secured 24X7 and to be kept through role based maintenance module which is used by EE staff & officers.

Decentralization of the Employment Services:

The old system was limited to employment exchanges, so that Candidate was need to came from their home every time for registration, renewal and updation which was time consuming and expensive for candidate.

Recently, Directorate of Employment & Self Employment, GoM has started decentralisation of Employment Services through 4272 service outlets i.e. Maha e-Sewa Kendra’s (CSC’s), Govt. ITI’s, Polytechnics, Engineering, Hotel Management, Architect colleges’ etc. by using the present portal 'Rojar Wahini'.

The total transactions occurred from 3rd Jan 2012 to 31st March 2012 are 9691 through these service outlets.

Rojar Mitra Application:

For computerization of the EEs, an Oracle based applications package was developed by National Informatics Centre, (NIC) Pune during 1997-98 and implemented in 36 EEs. Later, a DB2 based applications package namely 'Rojar Mitra' was taken up for development by NIC from 2001-02, which was implemented in all 45 exchanges during October 2003 to July 2005, after porting data from the Oracle to the DB2 platform.

Rojar Mitra has four modules according to the functional requirements of the EEs viz,

(i) Main (for registration, renewal and Updation of candidates),
(ii) Submission (for vacancy order (VO) booking and preparation of
candidates’ lists for submission to employers),
(iii) Employment Market Information (EMI) (for employer registration and processing employment market information returns)
(iv) User administration (for maintenance of users, their roles & permissions).

The Oracle based applications package implemented during 1997-98 and 1998-99 in 36 exchanges was incomplete as the EMI, Statistics and Submission module had not been developed.

The new applications package was implemented in all the 45 exchanges during October 2003 to July 2005. The ‘Rojgar Mitra’ application functionality was continually enhanced by NIC and DE&SE to cover existing deficiencies and to add new functionalities.

SMS Service:
SMS alert service is made available in Rojgar Wahini for Submission of Job Seekers details to an Employer & Renewal of Job Seeker Registration activity.

a) Submission: In the old system the candidates were not aware about his/her submission of his/her name to an Employer against the notified vacancies. So, the candidates use to come every time to employment exchange for enquiry.

But after starting the auto generated SMS service in Rojgar Wahini it is possible to send the information i.e. “Application has been sent to Employer with the employer details” to the candidate.

b) Renewal: Renewal alert messages are being sent to the candidates for renewal of their registration. First alert messages are sent on 1st day of last the month of valid renewal duration and final alert messages are sent on 26th day of the last month.

From 1st May 2011 up to 31st Mar 2012, the EE has sent total 6, 50, 025 SMS to the candidates using Rojgar Wahini portal.

DE&SE-IT Initiatives
5. TECHNOLOGIES ADOPTED

For computerization of the Employment Exchanges, an Oracle based applications package was developed by National Informatics Centre, (NIC) Pune during 1997-98 and implemented in 36 EEs. Later, a DB2 based application package namely 'Roijgar Mitra' was taken up for development by NIC from 2001-02, which was implemented in all 45 units during October 2003 to July 2005, after porting data from the Oracle to the DB2 platform.

The functions EMI processing, the statistical module & the submission module were not developed in Oracle based EEC software. NIC, Pune was in the process of developing these modules in Oracle but meanwhile the Government of Maharashtra, Director of Information Technology decided to switchover the technology from Oracle to DB2 RDBMS. Therefore, Oracle based applications software development was stopped. The decision to change the RDBMS was taken at the level of DIT and followed by the Department. However, registration, renewal and lapsing modules were developed in Oracle and day to day work was being done through these modules.

The IT Secretary, Maharashtra had instructed that all development of Application Software for Government of Maharashtra should be either Client-Server or Web based, as GOM wanted to shift to the new Client-Server / Web technology with GUI (Graphical Users Interface) environment. The IT Secretary recommended that all applications for the GOM departments should use the common database DB2, as a single back end for all the GOM applications, so that, data can be exchanged between inter departmental applications. DIT, GOM made available DB2 licenses free of cost to all departments. E&SE, GOM too wanted to develop a web based portal application for public. It was planned to keep data of all exchanges on the web portal. However, the data base structure of Oracle application was not in a form wherein the exchange data could be collected on one server. When the Oracle application was designed, this requirement was never considered, so Oracle based application package was left in between.

NIC tried to overcome almost all deficiencies in the old software, while developing the Roijgar Mitra Application Software.
The technology used in Rojgar Mitra is VB, DB2 for application & PHP for reporting and maintenance module. Also for Rojgar Wahini the PostgreSQL, PHP, Apache Web server, JavaScript, HTML, and CSS Security features as per NIC guidelines are implemented, i.e., Salted MD5 technique used for encrypted user-id and password. SQL injection flaws are addressed. Client- and server-side validations are included. Challenge response mechanism is used in feedback forms to prevent denial of service attack. Session management has been used.

The portal Rojgar wahini has been developed with the Open source technology to facilitate interoperability. Three elements of LAMP (Linux, Apache, MySQL and PHP) i.e. Linux, Apache and PHP have been used in the system. Whilst, DB2 was used as the backend as per policy of Government of Maharashtra, now data is ported to PostgreSQL open source database.

The Web System (RojgarWahini) uses Red Hat Linux Version 5.0, PostgreSQL Version 8.1.9, PHP Version 5.0 and Apache 2.0 Web Server.

**Benefits of open Source**

There are several tangible benefits in moving to an open source platform. While the obvious one is the fact that open source software’s may be available at a very low cost or in some case even completely free there are more, robust and persuasive arguments in favour of open source technologies, especially in a government or governance applications, where public money is deemed to be used.

- The availability of the source code and the right to modify is very important. It enables the unlimited tuning and improvement of a software product. It also makes it possible to port the code to new hardware, to adapt it to changing conditions, and to reach a detailed understanding of how the system works. This is why many experts are reaching the conclusion that to really extend the lifetime of an application; it must be available in source form. Source code availability also makes it much easier to isolate bugs, and (for a programmer) to fix them.

- The right to redistribute modifications and improvements to the code, and to reuse other open source code, permits all the advantages due to
the modifiability of the software to be shared by large communities. This is usually the point that differentiates open source software licenses from "nearly free" ones.

- The right to use the software in any way. This, combined with redistribution rights, ensures (if the software is useful enough), a large population of users, which helps in turn to build up a market for support and customization of the software, which can only attract more and more developers to work in the project. This in turn helps to improve the quality of the product, and to improve its functionality.

- There is no one with the power to restrict in a unilateral way how the software is used, even in a retroactive way. Such a power manifests, for instance, when a proprietary software vendor decides not to upgrade some software product for some old platform. In this case, customers can only stick to the old version of the software, or switch to another product. If open source software is used, customers can also fund some development for the desired platform, or look for other vendors to provide the upgrades (of the very same product).

- There is no single entity on which the future of the software depends. This is a very common concern with proprietary software. Open source software effectively protects against this, because if the group or company that originated the code decides to stop development, it is always possible to fund another software group to continue the maintenance and improvements without any legal or practical limitations.

- No per-copy fees can be asked for modified versions, and anyone can use the current code base to start new projects. Working knowledge can be gathered at a minimal cost. This is what made Internet software systems such an important factor in the new economy: students and people trying new technologies were able to integrate and adopt them immediately, without the hurdles of commercial or non-disclosure license agreements. In addition, the right to freely modify them allowed for the incredible expansion in the number of communication protocols and systems, each perfectly tailored to the needs of their users.
• There are fewer conflicting priorities due to marketing pressures. This is a simple consequence of the fact that there is no single commercial entity pushing for precise delivery dates or features that must be supported. Usually open source software is delivered "when it is ready," and when the development team feels that its quality is good enough. This means that software usually does not need as many "service packs," and such, reducing the maintenance cost. Of course this could be turned into disadvantage if a product is indefinitely delayed, or if some feature is missing one release after another. But in this case, the competition between projects may help. If a project starts failing to meet the expectations of its users, it often happens that a new project is forked, using the same code base, to fill this gap. This happens especially if a market exists for some new features, or for better quality versions of the application.

• It provides a new forum for democratic action. As individuals and companies decide where to make improvements in the system, the collective desires of the community determine the overall direction of progress, and yet without compelling anyone. People with opinions about what direction is best can urge others to join in, request help, and in this way influence the overall direction of progress, but without any elections in which the majority overrule the minority.
6. NEW PROCESSES

- Rojgar Mitra has five modules according to the functional requirements of the EEs viz.,
  - Main (for registration and renewal of candidates),
  - Submission (for vacancy order (VO) booking and preparation of candidates' lists for submission to employers),
  - Employment Market Information (EMI) (for employer registration and employment market information returns),
  - Employment statistics (ES) and
  - User administration.

New processes followed post the implementation of Rojgar Mitra and Rojgar Wahini-

<table>
<thead>
<tr>
<th>Process</th>
<th>At Exchange (Rojgar Mitra)</th>
<th>Online (Rojgar Wahini)</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGISTRATION</td>
<td>After the pre-registration talk, X-1 forms are being given to the candidates to fill their information. After verification of documents pertaining to their educational qualifications, experiences, birth date, caste etc., with the help of the filled X-1 form, the information of the candidate is entered through entry form designed in Rojgar Mitra Application Software. At the same time a photograph of the candidate is also taken with the help of a web camera. Finally, printed X-10 identity Card is generated and given to the candidate with signature of the authorized signatory.</td>
<td>An online registration facility is also made available to the Candidates through web portal <a href="http://ese.mah.nic.in">http://ese.mah.nic.in</a>. After selecting appropriate options and by submitting the form candidate gets personal information entry form. After filling and submitting this form the candidate gets provisional registration number and date. After getting provisional registration number and date, candidate has to approach the concerned exchange within 30 days from the date of online registration to verify documents and to get the confirmed printed X-10 identity Card or he can send attested copies of the testimonials by post to the concerned exchange with self addressed envelope to get the confirmed printed X-10 identity Card. Here, the candidate gets seniority from the date on which he/ she has registered his / her name through web.</td>
</tr>
<tr>
<td><strong>RENEWAL</strong></td>
<td>After putting the registration number in the <strong>renewal field</strong> made available in <strong>renewal</strong> option, the EE employee gets the <strong>renewal form</strong> for the concerned candidate whose Registration is eligible for renewal. After clicking the <strong>Renew</strong> button the registration gets renewed and printed X-10 Identity card is being issued to the candidate.</td>
<td>Online renewal is possible through the portal. After selecting appropriate exchange and after giving the registration number, date and birth date in the fields the candidate can renew his/her registration and print renewed registration card X-10.</td>
</tr>
<tr>
<td><strong>UPDATION</strong></td>
<td>X-1 forms are being given to the candidates to fill their changed information. After verification of documents pertaining to their changed information like educational qualifications, experiences, birth date, caste etc., with the help of filled X-1 form the information of the candidate is being updated through entry form designed in Rojgar Mitra Application Software.</td>
<td>Updation of information can be undertaken by the candidates through the portal. After selecting appropriate exchange and after giving the registration number, date and birth date, the candidate can his/her changed information. Sensitive fields like caste, birth date etc., are not allowed for updating.</td>
</tr>
<tr>
<td><strong>SUBMISSION</strong></td>
<td>An employer can send his requisition to the concerned exchange by post or by e-mail or through web. To send requisition through web, employer should register his establishment with the exchange. After getting the requisition from the employer the Vacancy order Card is being booked through the submission module made available in Rojgar Mitra Application Software. Then X-2a is being generated by giving the appropriate query as per the requisition. Then, this X-2a is being signed by the submission committee. After this X-83 i.e. the candidate submission list is being generated and sent to the employer through e-mail or in soft/hard copy format by post. Complexity of submission process and processing time become minimal due to computerised submission process using Rojgar Mitra software.</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td>At Exchange (Rojgar Mitra)</td>
<td>Online (Rojgar Wahini)</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SYNCHRONIZATION</td>
<td>From Exchange Server to the Central Server - The data generated through Registration, Renewal, Updation, Notified Vacancies and Employer transactions at the exchange server is uploaded in the form of files created by the utility on the central server. These files are being merged in the central database.</td>
<td>From Central Server to Exchange Server - The data generated through online Registration, Renewal, Updation, notified Vacancies and Employer transactions on the central server is downloaded and merged at exchange server with the help of utility provided in the Rojgar Wahini/Mitra Application Software.</td>
</tr>
</tbody>
</table>

**Data Flow**

- **Web Transaction at RojgarWahini-Temporary tables**
  - Candidate Registration, Updation, Renewal, Cancellation, transfer
  - Employer Registration ER1, ER2 returns
  - Vacancy Registration

---

- Candidate Renewal data gets added without verification
- Data gets downloaded at exchange using download utility
- Data gets inserted into Exchange’s Temporary Tables
- Data gets verified with actual documents within 1 month
- After one month if original documents are not available for checking then data gets rejected
- Verified Data gets added in Exchange’s Permanent tables
- Rejected Data gets collected into garbage

- Data gets uploaded in RojgarWahini using Upload utility
- Data gets inserted/updated into RojgarWahini Permanent Tables
7. CHALLENGES FACED & STRATEGY ADOPTED

The manual processes used in the employment exchanges before the era of computerisation were cumbersome and prone to human error. However, the transition to the computerised scenario over a period of almost ten years has its fair share of challenges including:

- **Technical Challenges**
  - The main issue here was with the availability and uniformity of data across the 45 exchanges throughout the state. Since records were all kept manually, data porting was a key challenge. Apart from this, the sheer volume of data necessitated the evolution of technology so that data management was done in a reliable & secure manner. Availability of storage and processing hardware was also a major constraint which had to be overcome.

- **Procedural Challenges**
  - With the advent of computerisation, business processes needed to undergo a change to suit the new technology. This was a time consuming effort, but one that needed to be undertaken at all costs. Also, an iterative process had to be adopted where the departmental needs evolved as the programme was implemented. This gave rise to several documentation challenges.

- **Attitudinal Challenges**
  - As in any major organisational change, the computerisation programme within DESE required a paradigm shift in the way the department thought and worked, horizontally as well as vertically.

- **Financial Challenges**
  - The development and deployment of Rojgar Mitra and Rojgar Wahini were substantial efforts by all means and hence did require financial resources. Since the department is not a revenue-oriented department, it was certainly an uphill task to get the funds sanctioned for the computerisation activity.

---

**DE&SE-IT Initiatives**
However, the department has been able to successfully overcome these challenges through the following strategies & policies adopted

- **Involvement of DE & SE**

  - Department has decided to remove the complexities in the process and bring the revolution through computerisation to fasten the service delivery. Data entry was the one of major challenge at that time to DE & SE due to the old and non handy manual records. DE & SE has overcome on this and successfully done the data entry.

  - DE&SE officers has done hard work to collect huge information from various offices, NGO's, Training centre, Government agencies, beneficiary of schemes etc.

  - DE & SE has formulated Core-Group of selected staff and trained them to work on requirements for Rojgar Mitra and Rojgar Wahini initially and thereafter to solve the problems regarding the functioning of both with the help of NIC.

- **Involvement of NIC**

  - The National Informatics Centre, Pune has played a stellar role in the development and the roll-out of the computerisation programmes of the department. The tight involvement of the NIC team enabled them to acquire excellent domain expertise (and hence a real feel of the problems faced by the departments) which was then translated into a technological solution.

- **Business Process Reengineering**

  - Some of the processes & documents were re-looked at from the point of view of simplicity, authenticity and completeness of the information being stored or processed. For example the Candidate Registration form (X1) had undergone suitable changes, so that the information capture is easier. Even the Registration Card X10, which contains the photo of the candidate with all profile details, was modified.

  - Earlier, submissions of suitable candidates to an Employer against notified vacancies were strictly sent by seniority. This was resulting in repeatedly sending the names of same candidates who are in
seniority. These candidates were not attending the Employers as they may work with another or taking higher education. Therefore, Employers did not get needy candidates for the vacant jobs. Hence, man efforts & all resources were gets fruitlessly. Therefore, 3 chances for permanent vacancy, 6 chances for temporary vacancy & one chance for police vacancy incorporated in the submission process. This has resulted to move submission seniority towards rotating manner.

- **Use of Open Source Softwares**
  - For Rojgar Wahini, the development platform is open source, which has eliminated the licensing complexity that proprietary software normally brings in. The development costs have certainly been saved to the extent the financial challenges have been addressed. The department is also the owner of the source code and can modify or distribute the software as it deems fit.

- **Training**
  - Substantial mindset change was brought about through continuous training and handholding programmes throughout the offices of the employment department. NIC conducted training sessions online as well as in their own premises for several departmental personnel. The NIC uses strategy to train trouble-shooters from department so that they will work independently without any technical help from NIC. Also NIC has developed a core group strategy, the core group is itself from department which was trained by NIC, and the core group is now working as help desk for all the EE’s in Maharashtra.
8. SUSTAINABILITY OF THE APPLICATIONS

The application Rojgar wahini and Rojagar Mitra found sustainable because of the following key points:

8.1 Open Source platform:
For Rojgar Wahini, the development platform is open source, which has eliminated the licensing complexity. The DE&SE is also the owner of the source code and can modify or distribute the software as it deems fit.

8.2 Web Maintenance strategy
All information of portal is done by EE employees using role-based, secured web-maintenance system. Most of the information displayed on the website comes from database which is maintainable using this system.

8.3 Active Participation of EE Employee
Both the application Rojgar Mitra & Rojgar Wahini is sustained due to the DE&SE Employee’s active involvement. DE&SE has many maintenance groups at various levels.

Rojgar Wahini Website Application
This dynamic and user maintainable Portal, published in Marathi is sustainable as there is complete involvement of the officers and staff of the Directorate for collecting and updating information. The department has formed a hierarchy of the trained staff member groups which was trained by NIC to take care of all the technical problems that arise frequently.

The groups are:
   a.  Core Group
   b.  Sub Group
   c.  District level Group

   a.  Core Group
   This is state level core group consisting of two members from each six division; this group is responsible for following tasks,
      i.  To design and development of the Rojgar Wahini portal.
      ii. Studying the notices regarding website design came from
Government, Directorate, Officers of the department and implementing the same.

iii. Convey the information regarding the changes to subgroups and to give the training for upgraded technologies to subgroups.

b. Sub Group

The subgroup is at division level having three members from each six division and they have given their own task to do like a Subgroup for schemes will take care of all information gathering regarding the state / Central Govt. schemes and the same information on portal.

c. District level Group

Is responsible to gather information from other department like banks, Other Government / semi Government department, Societies, Training institute and classify the same into Group, Subgroup, and core group and to send that classified information to subgroup for update it on portal.

The Website Maintenance Monitoring Group

This group is specially formed to monitor the correct and timely updations on website.

This group is having total six members (Divisional Deputy Directors) from the Maharashtra regional offices. One of them is heading this group for confirmation of timely monitoring & reporting same to the Directorate in fixed format. The all five members are responsible to monitor allotted modules of website to monitor. They report the information to the Group Leader.

Rojgar Mitra

From the beginning of design & development of application, DE&SE has formed state level Core Group consisting of all cadre employee; two members of each from six division including desk officer of Directorate. Even in case of transfer of employee, this group remains unchanged. Presently, this group is having a meeting minimum once in about 2-3 months. This group has developed capacity of fully maintenance of Rojgar Mitra application i.e. Server software installation, data restoration, RM installations & diagnosis etc.
a. **Core Group**

The group is responsible for following tasks:

i. Gathering the requirement for development of the application.

ii. Business process re-engineering (BPR)

iii. Testing of the application

iv. Installation of modules of application came from NIC in to all District Employment exchanges with the help of sub groups.

v. Maintenance of application

vi. Training of subgroups & EE employees on newly developed modules.

b. **Sub Group**

The Subgroups conveys the information upwards and takes care of small type of technical problems and maintenance of the application.

c. **District level Head**

The one person in each district offices is selected as a head of computer department and who takes care of requirement gathering regarding hardware procurement, Maintenance as well as software requirement and convey the same to subgroup.

Exchange Head is having the administrative rights of the application so that he is responsible for giving the role base permissions like Renewal, Submission, EMI etc. to the staff of that particular department.

**Division Coordinator**

The one person from each division is selected as a division coordinator who acts as medium between division and head office.

He is responsible for giving up to date reports regarding Software/Hardware maintenance, requirement to head office.

So the above hierarchy is a backbone for sustainability of the applications.
9. **TANGIBLE & NON-TANGIBLE GAINS**

There are several tangible gains observed by the DESE, after the implementation of the client-server based Rojgar Mitra as well as web-based Rojgar Wahini.

**Tangible Gains**

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>True fulfillment of the departmental objectives</td>
<td>Computerisation has enabled the department to reach out in the true sense. This is a situation where, the use of technology has enabled the department to fulfil its very purpose in a more effective manner.</td>
</tr>
<tr>
<td>Accent on Self-Employment</td>
<td>The portal emphasises the department’s thrust on self-employment and capacity building in an effective manner, due to its vernacular nature.</td>
</tr>
<tr>
<td>Citizen Centric</td>
<td>The portal is focused on the candidate &amp; Employer and makes the entire process chain from registration, renewal, updation and job assistance, simpler and more transparent.</td>
</tr>
<tr>
<td>Single window access</td>
<td>Computerisation has allowed the remote exchanges to act as single windows for candidates &amp; employers need, as against the centralized scenario in the past.</td>
</tr>
<tr>
<td>Dynamic - Database driven</td>
<td>The department’s functioning revolves around data – related to candidates &amp; vacancies. Hence, a robust, secure and scalable database engine – like the one used by the department, can make the overall functioning more efficient.</td>
</tr>
<tr>
<td>Office Aesthetics</td>
<td>Due to the extensive computerization, the exchanges have replaced the forbearing look of the offices with pleasantness and cleanliness. This provides a better ambience for the candidate to walk into and enquire about vacancies. The following is a Performance graph and a photograph of one of the exchanges.</td>
</tr>
</tbody>
</table>
**Non-Tangible Gains**

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Exchange Activity</td>
<td>The processes like Registration, Renewal, Updation, Transfer and Submission becomes quick, Prompt and reliable.</td>
</tr>
<tr>
<td>Minimal Use of Manpower</td>
<td>The present system uses minimal use of manpower as compare to Manual system.</td>
</tr>
<tr>
<td>Cost effectiveness</td>
<td>The present system is very cost effectiveness with respect to Manpower, time, partial paperless office work, etc.</td>
</tr>
<tr>
<td>Reduced office Space</td>
<td>The office space is reduced no bulky files needed now, look neat, cleanliness and hygiene came accordingly.</td>
</tr>
</tbody>
</table>

**Performances Graphs**

![Graph showing DESE-Roijgar Vahini](image)
Data Storage before Computerisation:

EE environment after Computerisation

DE&SE-IT Initiatives
10. LEARNINGS DERIVED

The process has not been perfect as the department officials will be the first ones to admit. However, the learning's from the project will be of immense benefit to other government departments and specifically other employment departments around the country, as they embark upon their own computerisation programmes.

Learning # 1
Use Open Source
Open source technology is the way for the future. With the rapid development that is happening in open source technologies, there is much to gain for government departments. The first preference for any software should be open source and after analysis, if it is felt that open source technology is not mature then only proprietary software should be used.

Learning # 2
Follow Security Standards
Data security is paramount in the modern day IT scenario. Hence development and database structures should adhere to as rigid standards as possible to eliminate possibility of data leakage or hacking.

Learning # 3
Focus on Design
The requirement gathering and BPR stages are the most important from the point of view of the success of the system. A proper requirement effort will create performance parameters that the system has to adhere to, and which must be built into the design.

Learning # 4
Appropriate Technology
Any technology that is used should be suitable for its purpose. Latest is not necessarily the best. And hence, technology evaluation before the design stage must be done to understand the application of the technology in your scenario.

Learning # 5
Involvement & Training
Involve the User Dept. officers and employees from all levels as they give the right information and feel responsible for the product under development. Try to train as many people who can become change agents within their departments. It helps in project testing, roll out and maintenance.
11. REPLICATION

The following features enable the portal to be replicated to other geographical location with very little modification.

- The use of open source technologies means that there are no licensing constraints in terms of any other government department using this software. Similarly, the only constraints on the scalability are as defined by the available processing hardware.

- Since the software and the site adhere to Localization Standards for E-Governance issued by NIC, they can be replicated in any other vernacular medium.

- The data in respect of candidates, employers, schemes, agencies and training is massive and dynamic. So, a complete database driven solution is provided in PostgreSQL.

- Keeping in view the rural candidates, the portal is designed in Marathi (local language, Devnagari script) using Unicode. Since a Unicode based design is adopted, no proprietary fonts are required to be downloaded to view the portal.

- Portability:- The design is such that the portal can be enabled for any language without any programming effort. The website can be converted for particular language by translating the content to the desired language, all dynamic data stored in a database is to be entered in the given language and all static information like labels, messages and help accessed from common include files is to be converted to the target language. The portal is developed on the Open Source Platform.

- Maintainability:- All care has been taken so that the site can be easily maintained by the user department. All information displayed on the website is from a database and a facility is provided to authenticated users to add, delete the data elements as per the permissions granted to them. Style sheets are used to give uniform look and feel to all pages, facilitating easy maintainability.
12. LIMITATIONS OF PRESENT SYSTEM

DE&SE has taken several initiatives towards ushering the e-Governance and by leveraging the ICT (Information, Communications, and Technology) strength. It has implemented two ICT applications namely Rojgar Mitra and Rojgar Wahini over a period of time with assistance from National Informatics Centre (NIC), Pune. Maharashtra Employment & Self-Employment is today considered one of the advanced states to have implemented ICT based systems to effectively deliver its employment related services to citizens in the State. Analyzing of existing ICT systems in DE&SE and future expectations about automated job matching, timely alerts to Job Seekers/Employers & delivering real time online services; present set-up has many challenges in operations as it is a hybrid model of client-server application and web-based portal. The data transfer from one system to another still presents challenge due to difference in underlying databases design and type.

The DE&SE faces the following challenges:

a) Issues with the Rojgar Mitra Software:
The application is running in a decentralized way, where some locations might be running on different versions & updates. It is difficult to insure that all the systems are running on the same updates.

b) Non availability of Interactive Public Interface:
From time to time the DE&SE has implemented various Public Interface facilities. However, operations and functioning of these centers need to be streamlined to suit the needs of the consumers.

c) Less use of MIS:
The DE&SE though having full information regarding many details has not been able to take full advantage for centralized Management Information System (MIS) due to client-Server architecture. No central dashboard.

d) Online Registration:
The facility of candidate registration is not completely web based. The process needs to be completely automated, user friendly and smooth.
e) Interlinking with other Departments:
The Department cannot share its information with other Departments of the State Government. If needed the new system should be able to communicate with other state departments. This might be a very important feature for the proposed Labour market Information System.

f) Software Support System:
Currently Department is having centrally software support from NIC, Pune. Due to unavailability of departmental technical persons, proper support and maintenance of each exchange System is a difficult task.

g) Decentralised Data storage:
Different kinds of data are being captured through Departmental software Roigar Mitra. But due the decentralized architecture, it is not possible for the Department to use this data in an optimum way for all the applications.

h) No proper login ids for Employers/ candidates:
At present there is no proper facility of login ids for employers and candidate and as such users do not have a personalized profile where they can update or view their details online.

i) No SMS and Email integration:
There is an urgent need to provide SMS and email facility to the users. Because of the decentralized nature of the present system it is not possible to integrate these modules.

j) Absence of search engine and automated job matching:
Candidates are not able to apply for jobs directly because of the absence of a job matching feature. This would only be possible when the employer is able to upload his vacancies directly through the Internet. Also because of the absence of a search engine it is very difficult to short lists jobs from the database.

k) Manual data merging between exchange servers and central servers
Because of the client server technology data has to be merged from the district exchanges to the central server. Both these systems work on different databases and it has been observed that 100% data migration is not being carried out. This makes the data on the central server unreliable. It is important that the data be entered only once on a centralized database.
13. THE ROAD AHEAD

With the departmental objectives encouragingly met through the computerisation programmes, there is increased confidence within the department when it comes to implementation of new technologies. The challenges in the new, modern day, media-driven world are many. The employment department has to necessarily benchmark against private exchanges / agencies which are more nimble and technology-savvy. The department has to leverage the robust technological platforms to further reach out to the society and the candidates, in a bid to capture the space of the premier facilitator of employment opportunities and societal change.

Several avenues exist in this respect:

Use of Mobile Technology:
Service delivery frameworks based on both the internet & mobile technologies can be more beneficial to citizens. The penetration of internet in Maharashtra is yet to attain maturity. The full benefits of website as an interface will have to wait to attain a certain level. In contrast to this, the telephone penetration is sizable. With about 800 million mobile phone connections, tele-density of about 70%, monthly cell phone addition of over 20 million & projected density of over 85% by 2012, India is the third largest telecommunication network in the world and the second largest in terms of number of wireless connections. With a subscriber base of nearly 95 million & a wireless density of nearly 85%, Maharashtra is on the second position in the list of India Top 10. Further, it has been estimated that Maharashtra State will reach 100% tele-density levels in 2012.

Mobile technology (with its “always-on” nature of connectivity) can thus be applied for a broader service delivery mechanism. Services such as candidate registration, vacancy status, application status etc can be easily provided through the mobile platform.

Social Media:
The rate of penetration of social media such as Facebook, Google Plus, Twitter and so on is staggering, especially for a nation such as India. However, these social media are here to stay and the department should utilise the power of the social media to implement outreach programmes.
The nature of these programmes can be of the softer side, including counselling services and grievance resolution, for example.

**International Benchmarking:**
Government-run employment departments are present all over the world – DESE can take the lead to network with such agencies to share learning and encourage adoption of best practices, especially on the technology front.

**Technology Replication:**
Having tasted the fruits of the technological reformation that has been noticed in the department, DESE can also liaison with employment departments within India to act as an agent of technological transformation. Other employment departments can learn from the DESE in terms of things that were done right and even things that did not go as well as expected.

**Business Intelligence:**
Bringing the right information at the right time to the right people in the right format, it is a 5-step process to run the business smarter, starting with registering the right data correctly, collecting the data from multiple sources, transforming, combining and storing it in a data warehouse. Exactly the same EE wants to acquire, the right information flow to candidate and employers at the right time is what the goal of EE.

**Common Platform for Employer and Candidate:**
Some of the remaining task to do is common platform for employers and the candidate so that candidate can get his/her right employer and vice-versa. It will reflect the EE growth as well as it will create the competition in private employment agencies market.
14. ANNEXURE:

A-1 PORTAL SCREEN SHOT
### A-2 PORTAL USAGE STATISTICS

**Monthly Statistics for February 2012**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Hits</td>
<td>13155725</td>
</tr>
<tr>
<td>Total Files</td>
<td>7978624</td>
</tr>
<tr>
<td>Total Pages</td>
<td>2165222</td>
</tr>
<tr>
<td>Total Visits</td>
<td>155201</td>
</tr>
<tr>
<td>Total KBytes</td>
<td>184648064</td>
</tr>
<tr>
<td>Total Unique Sites</td>
<td>88517</td>
</tr>
<tr>
<td>Total Unique URLs</td>
<td>5286</td>
</tr>
<tr>
<td>Total Unique Referrers</td>
<td>2953</td>
</tr>
<tr>
<td>Total Unique Usernames</td>
<td>1</td>
</tr>
<tr>
<td>Total Unique User Agents</td>
<td>12339</td>
</tr>
</tbody>
</table>

**Daily usage for February 2012**

![Daily usage graph for February 2012](image)
A-3 ROJGAR MITRA EXCHANGE APPLICATION SCREEN SHOTS

LOGIN

[F152] Login - RojgarMitra-Admin Ver 2.0.0

YOU HAVE LOGGED ON TO
PUNE

User ID

Password

OK  Cancel

MAIN

[F147] User Login Information

Welcome to RojgarMitra - Main
Rojgar Mitra - Main Version 2.0.0

User Name: mlind
Logged In Date/Time: 06-May-2005 05:45:54 PM
Last Logged In Date/Time: 06-May-2005 04:45:59 PM
Last Logged Out Date/Time: 06-May-2005 04:46:57 PM
**ADMINISTRATOR**

**Welcome to RojgarMitra-Admin**
RojgarMitra-Admin Version 2.0.0

User Name: milind

Logged In Date/Time: 15-Apr-2005 04:24:12 PM
Last Logged In Date/Time: 15-Apr-2005 02:57:15 PM
Last Logged Out Date/Time: 15-Apr-2005 03:58:32 PM

**EMI (EMPLOYMENT MARKET INFORMATION)**

**Welcome to RojgarMitra-EMI**
RojgarMitra-EMI Version 2.0.0

User Name: Anjali Fernandes

Logged In Date/Time: 02-May-2005 11:55:50 AM
Last Logged In Date/Time: 02-May-2005 11:48:41 AM
Last Logged Out Date/Time: 02-May-2005 11:51:55 AM

**DE&SE-IT Initiatives**
Welcome to RojgarMitra-Submission
RojgarMitra-Submission Version 2.0

User Name  Gangaram A Sangde
Logged In Date/Time  02-May-2005  11:14:25 PM
Last Logged In Date/Time  First Time Login
Last Logged Out Date/Time  First Time Login
CSI-Nihilent  e-Governance Awards 2007-08

The award for
Best e-Governed Project
(Outstanding Project)
is hereby conferred upon
Rojgar Vahini, Maharashtra

On the 19th of December 2008 at New Delhi

DE&SE-IT Initiatives