AWARDS SCHEME FOR EXEMPLARY IMPLEMENTATION OF e-GOVERNANCE INITIATIVES

EXCELLENCE IN GOVERNMENT PROCESS RE-ENGINEERING

1. **Coverage – Geographical and Demographic**

   (i) Comprehensiveness of reach of delivery centres:

   > The College Management System caters to all medical and para medical institutions affiliated to the State Medical University – The Tamil Nadu Dr. M.G.R. Medical University, Chennai (TNMGRMU).
   >
   > This is one of the largest implementations in India which covers all the 585+ institutions affiliated to the TNMGRMU – both Government and Private institutions offering courses in Medical, Dental, Indian Medicine @ AYUSH, Allied health sciences (Pharmacy, Nursing, Physiotherapy, Occupational Therapy, etc.)

   (ii) Number of delivery centers:

   > All the 585+ Government and Private institutions across Tamil Nadu, affiliated to the TNMGRMU.

   (iii) Geographical:

   (a) National level – No of State [1] covered

   (b) State/UT level- No of District [32] covered

   © District level- No of Blocks [385] covered

   Please give specific details:-

   > All the 585+ Government and Private institutions across Tamil Nadu, affiliated to the TNMGRMU.

   (iv) Demographic spread (percentage of population covered):

   > The System covers more than 2 lakh students pertaining to the various

affiliated Government and Private institutions across the state.

2. **Situation Before the Initiative** (Bottlenecks, Challenges, constraints etc with specific details as to what triggered the Organization to conceptualize this project):

- ➢ Entire process was offline

- ➢ More manpower was deployed to carry out the academic process

- ➢ Huge paperwork involved.

- ➢ Publishing of student examination results, enrollment of students in the University, convocation process and academic activities faced a time delay due to manpower involved in the collection, collation and processing of data.

- ➢ Delay in the delivery of academic services due to the manual process and dependencies involved.

- ➢ Collection, collation and presentation of data were cumbersome.

- ➢ Lack of availability of Student-wise database for analysis and decision making.

- ➢ Data redundancy due to the paper based maintenance of multiple versions of same information.

- ➢ Data discrepancies due to manual process.

- ➢ Lack of transparency and disconnected information flow.

- ➢ Confidentiality & Security of critical information

3. **Extent of Process re-engineered** (Processes that have been re-engineered, services which depend on these processes, analysis/re-design of Process workflows – before (As-Is) and after (To-Be) re-engineering; changes in activities and their sequencing; level of automation (Extent of computerization in terms of number of services computerized, Extent to which steps in each service have been ICT-enabled) #)

> ➢ End – to end Computerization of all academic activities
>
> ➢ Online, Web based, centralized availability of the system
>
> ➢ Automation of all the critical work flows in the system, there by reducing the manpower involved.
>
> ➢ All the major workflows/processes were made configurable and Rule based to minimize the human intervention involved – keeping in consideration the frequent changes introduced by the University in the system.
>
> ➢ Three-tier approval system for all critical process in the system – to ensure transparency, security, authorization and validation of information.
>
> ➢ The University, the affiliated Institutions and the students, all are available in the same information platform, thus ensuring the immediate availability of relevant information for each of these stake holders.
>
> ➢ Completely secured system (Password protection, Multi-level access control for critical process, STQC Certified, data encryption and barcode).
>
> ➢ Reading the Barcode directly using Barcode Reader instead of Intelligent Character Recognition (ICR) technology which gives

almost cent percent accuracy.

➤ Strictly Authenticated profile dependent access to the data

➤ Ensures Data privacy and maintains Data integrity

➤ Reduces information time lag, hence, reducing the pipeline delay for any activity.

➤ Eliminate duplicate data entry and redundant information storage that most often propagates errors.

➤ Variable data printed in the University Examination Answer sheets for early publication of results.

Success Metrics

➤ End – to end computerization and automation of Student enrollment and Examination process.

➤ Examination Results were published within 48 hours after the Answer script valuation in the online system.

➤ Student data verification, validation and generation of register numbers are done within 30 days after student institution level enrollment in the online system.

➤ Online entry, verification and approval of internal marks and oral/practical /project/ dissertation marks in the online system.

➤ Online spot entry of written examination marks by the concerned examiners in the system thus ensuring the confidentiality and security of data.

➤ Online secured delivery of theory exam question papers to the

exam centers 15 minutes before the examination.

➢ Online entry, submission and tracking of Post degree Internship details.

➢ End – to-end automation of the convocation process which includes the automation consolidation of eligible candidates, generation of degree certificates, automatic consolidation of medal winners, generation of medal certificates, automatic seating arrangement feature, convocation admit card generation and online download /printing, etc.

➢ Computerization of the institution affiliation process – there by reducing the maintenance of the paperwork / manual process involved in maintaining the status of affiliation process.

➢ Complete computerization of academic activities – course management, subjects and pattern management, syllabus management, academic certificates generation and printing etc.

4. Strategy Adopted

(i) Details of base line study done:

➢ The Tamil Nadu Health Systems Project (TNHSP) desired to bring e-governance in the University for transparency and accountability.

➢ As is process was studied, The requirements specification document was prepared in consultation with the core team for improvement in process, reduction in duplication of work, computerization of process, configurable workflows etc.

(ii) Problems identified:

> ➢ Time delays
>
> ➢ Confidentiality
>
> ➢ Real time data for quick decisions
>
> ➢ Collation of data
>
> ➢ Radical and frequent changes in the workflow of critical process.
>
> ➢ Frequent changes in the organization chart

(iii) Roll out/implementation model:

> ➢ Centralized web based application.
>
> ➢ IP Based, Password protected, Biometrics enabled, Authentication and authorization mechanism.
>
> ➢ Simple screens with frequently used data prepopulated in the relevant fields.
>
> ➢ Detailed reports (course wise, institution wise, statistical, periodical, analytical reports) covering all the required information along with the report log data.
>
> ➢ Master screens to maintain master data and workflow rules.
>
> ➢ Detailed Audit trial mechanism

(iv) Communication and dissemination strategy and approach used.):

> ➢ Demo/Training session to the end users (Institution/ University users)
>
> ➢ Demo/Training session to the University IT Department

> ➢ Helpdesk – for call support and guidance to the users
>
> ➢ Train the trainers – core team in University fully trained on application
>
> ➢ Conducted regular Hardware and Software Review meetings and addressed the issues.
>
> ➢ All the affiliated institutions have been communicating with the University allotted email-id in the format of <institution code>@tnmgrmu.ac.in

5. **Technology Platform used:**

   (i) Description:

Application/Web server :

Sun Solaris 10, Glassfish

Database server :

Sun Solaris 10, PostgreSQL 9.2

Technology :

Java/J2EE Application

   (ii) Interoperability:

> ➢ Tested in multiple open source platforms: Server side - Red hat Linux with Jboss/Tomcat and client -side - Windows & Linux.
>
> ➢ Works perfectly in all the major browsers like Mozilla Firebox, Google chrome, Internet Explorer, Safari etc.

(iii) Security concerns:

> ➤ STQC certification obtained.
>
> ➤ IP Based authentication for users who have access to critical process in the workflow
>
> ➤ Strong Encryption of passwords and critical information in the system
>
> ➤ Payment gateway implemented for the online payment of fees by the students to the University
>
> ➤ Web hosting services provided by TN State Data Centre is the important element of the core infrastructure for supporting e-Governance initiatives of National eGovernance Plan (NeGP).

(iv) Any issue with the technology used:

None.

(v) Service level Agreements(Slaps) (Give details about presence of SLA,

whether documented, whether referred etc. #)

All SLA conditions have been specified and documented in the contract.

6. Citizen Centricity (Give specific details on the following#)

(i) Impact on effort, time and cost incurred by user:

> ➤ Improved transparency in the workflow.
>
> ➤ Immediate availability of required information to the authorized

users.

➢ Students can now view the results online immediately after publication of the results.

➢ Students obtain the services immediately within reduced lead time from the University.

➢ Students can now pay for the services online through secured payment gateways and avail the services immediately within the defined time frames.

➢ Mark statements, Provisional certificates and other academic testimonials were provided to the students immediately – thus eliminating the delay involved in acquiring these services by the students.

➢ Payment from institutions to the University has been converted into an electronic payment system through RTGS/NEFT based system with facility to update the remittance data into the system.

➢ Reduction of the paper based records and the manual process in the institutions in the perspective of academic activities (student information, exam information, convocation information etc).

➢ Even distribution of workload between the University and institutions.

➢ Better clarity in the responsibility assigned for each users/ stakeholders.

➢ Online entry of Internal Assessment Marks and Attendance

successfully implemented for all the courses – thus eliminating the delay involved in the manual dispatch of the mark details by the institutions to the University

➢ Online spot entry / verification and approval of Oral/Practical Marks – thus ensuring the elimination of the delay involved in the manual dispatch of the mark details by the institution to the University and facilitate speedy result processing.

➢ Online spot entry of theory marks by examiners that significantly reduce the time for processing of the results and does away with the earlier cumbersome system of scanning of sheets.

➢ Online generation and instantaneous downloading of the Examination application, Hall tickets, Result mark statements, convocation application, Convocation admission cards etc – to cut down the time , cost and effort to acquire these services.

(ii) Feedback/grievance redressal mechanism:

Helpdesk – call and email support

(iii) Audit Trails:

➢ Detailed User level audit trail maintained in the system.

➢ Audit trails with detailed information of the creation / Updation/ deletion of data for all the critical process.

(iv) Interactive platform for service delivery:

The system is a web based online application which brings   all the

stakeholders – the students, the institutions and the University in a single interactive platform thereby facilitating the sharing of information in an authenticated mode, instantaneously and eliminating the delay in the transmission of information and manual /paperwork involved.

(v) Stakeholder consultation:

Several iterations with different stakeholder groups –

Vice Chancellor, Registrar, Controller of Examinations, Deputy controller of Examinations, Section heads, IT Coordinators, System Analysts, Application Programmers and Computer operators

Institution heads, Institution Department heads, Institution users, Dept. of Health, Health Administrators.

7. User convenience (Give specific details about the followings #)

(i) Service delivery channels (Web, email, SMS etc.):

> ➢ 24 x 7 Online web based system
>
> ➢ Anytime access with IP /password based authentication

(ii) Completeness of information provided to the users:

The system facilitates end – to end automation / computerization of all the academic activities through the entire student academic life cycle in the University, right from student enrollment, examination process, post examination process, convocation and post-degree support (providing eligibility certificates, migration certificates, duplicate mark sheets, transcripts etc). None of the workflow points in the student academic life cycle requires massive human intervention / is left out

in the system.

(iii) Accessibility (Time Window):

The application is any where / any time access binded with factors like IP Authentication/ Password / biometric based authentication.

All the critical workflow process is time-bound and will be opened / closed for access by the students / institutions, as decided by the University. The system has detailed facility control the time-bound access of screens/ workflows.

(iv) Distance required to travel to Access Points:

Anytime anywhere access for Students to download the exam results, convocation admit card , online payment and acquisition of University bound services like eligibility certificates, migration certificates, mark sheets, transcripts, provisional certificates etc.

Institutions can now upload the Internal marks/ practical marks online, verify and submit exam applications, convocation applications, remit payment to the University online through RTGS /NEFT etc- thus eliminating the need for the manual despatch of the above mentioned details to the University.

(v) Facility for online/offline download and online submission of forms:

➢ Institutions can now download online the exam application forms, hall tickets, convocation applications, convocation admit cards etc.

> ➢ Students can now download online the exam application forms, convocation admit cards, Result /mark statements etc.

> ➢ Institutions can now submit & verify online the Internal/Oral practical marks, faculty /staff details, Student enrollment details, Exam applications, payment remittance to the University under various account heads, affiliation application, convocation application etc.

> ➢ Students can now submit and make payments online for the various University bound services like Issue of Eligibility certificates, migration certificates, duplicate mark sheets, transcripts, provisional certificates etc.

(vi) Status Tracking:

The system extensively supports the tracking of the status of various critical process like student enrollment , enrollment verification , approval , register number generation, Exam application submission, verification, approval ,Internal /Oral practical marks submission, verification and approval, Hall ticket generation and printing, result processing activities submission and approval, result publishing approvals, mark sheet printing ,convocation application submission , verification and approval, degree certificates , medal certificates approval and printing, convocation admit card approval and printing, provisional certificates approval and printing, internship details submission and approval etc.

All the critical institution centric activities have three levels in the workflow – Institution level data submission, Institution level data verification by respective Institution heads/HODs and University level approval by respective section heads

All the critical University centric activities have two levels of workflow – section head level data submission and controller /deputy controller level approval of data.

Status tracking and alerting mechanism is facilitated through appropriate flag indicators / messages for each level of workflow to the corresponding users in the workflow chain.

8. **Efficiency Enhancement** (Give specific details about the following #)

   (i)   Volume of transactions processed:

   Exam Application forms, Attendance, Internal Assessment, Hall Tickets, List of candidates appearing for Examination [Galley], Oral/Practical, Results Galley for 75,000 students per annum are made available online.

   (ii) Coping with transaction volume growth:

   Data available instantly.

   (iii) Time taken to process transactions:

   Less time taken to process transactions. Able to extend the services

   (iv) Accuracy of output:

   Reliable and accurate.

   (v) Number of delays in service delivery:

   By post time delays. The students are given extended time to submit the forms.

9. **Cost effectiveness** (Give details about impact on cost incurred w.r.t. overhead cost, direct and indirect cost, man days/man hour required to do a job etc.#)

> Elimination of two lakh sheets pack and dispatch by Post to the affiliated institutions for conduct the examinations.

10. **Capacity Building and Organizational Sustainability** (Give details about hiring skilled staff, imparting training etc.#)

> All the staff up to the level of Assistants, have been provided with Desktop computer, Dot Matrix printer, UPS and Network connectivity. Necessary fundamental training for all University staff and essential training for all University IT personnel have been provided through the Tamil Nadu e-governance Agency (TNEGA).

11. **Accountability** (Give details about, impact on transparency of process, fixing responsibilities etc. #)

> Roles and Responsibilities well defined in each process at University level and institution level to bring accountability. L1 is Institution-level Assistant, L2 is Institution-level authority, L3-University-level Assistant, L4- University-level authority. G.O. has been proposed and submitted to State empowerment Committee and approved, issuance of G.O. will be done shortly.

12. **Innovation** (Give details on the extent to which re-engineered process is unique, compared to other common process re-engineering efforts,

impact on number of steps required, identification and removal of bottlenecks/Irrelevant steps etc. #)

> The system is designed in such a way that all the critical process is completely configurable and is rule based.
>
> The system has also eliminated the unnecessary verifications, multiple level consolidation of data and manual checks involved in the previous system.

13. **Appropriate Delegation** (Give details on whether a team involving employees from all levels has been deployed for the project implementation and maintenance, can employees be held accountable for their actions, etc. #)

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14. **Result Achieved/ Value Delivered** to the beneficiary of the project-(share the results, matrices, key learning's, feedback and stakeholders statements that show a positive difference is being made etc):

    (i) To organization:

> - Academic activities fully automated to enhance operational efficiency
>
> - Reduced manual /paper based work
>
> - Effective utilization of man power and other resources
>
> - Elimination of delays encountered in service delivery
>
> - Transparency in the workflow

> ➢ Improved and rapid analysis and decision making due to high availability of relevant information.

> ➢ Better outreach to the respective stakeholders

(ii) To citizen:

> ➢ Immediate and direct access to the relevant information

> ➢ Better transparency in the process.

> ➢ Reduced /no wait time for service delivery

> ➢ Reduced cost / time/effort spent for acquiring the services from the University/institution.

> ➢ Supports RTI Act 2005.

(iii) Other stakeholders:

> Availability highly proven and cost effective process automation model which can be scalable and replicable across other similar educational bodies

15. **Extent to which the Objective of the Project is fulfilled**-(benefit to the target audience i.e.G2G, G2C, G2B, G2E or any other, size and category of population/stakeholder benefited etc):

As on date ,

> ➢ Total Number of Institutions covered by the system (including Government and Private) : 586

> ➢ Total Number of courses covered by the system (including

Government and Private) : 330

➢ Total Number of Students handled by the system : 2,00,000

➢ Total Number of Student admission sessions handled by the system (since Oct 2010) :22

➢ Total Number of Exam sessions handled by the system (since 2011) :25

➢ Total Number of Convocation sessions handled by the system (since Feb 2012) :11

➢ Total Number of Exam Results processed   by the system (since Feb 2011): 12,00,000

➢ Total Number of Degree certificates issued by the system (since Feb 2012): 37,500

16. Adaptability Analysis

(i)   Measures to ensure adaptability and scalability

The application is configurable and personaziable according to the client requirements.

(ii)   Measures to ensure replicability:

The application is entirely configurable and this facilitates the replication of application for multiple implementations, with out major rework and effort.

(iii)   Restrictions, if any, in replication and or scalability

No major restrictions

(iv)   Risk Analysis:

The system totally depend on Internet availability in the affiliated institutions, even in remote villages.

17. **Comparative Analysis** of earlier Vs new system with respect to the BPR, Change Management, Outcome/benefit, change in legal system, rules and regulations

Paperless environment brought comfortable working atmosphere.

18. **Other distinctive features/ accomplishments of the project**:

1. All the critical workflows are configurable and rule based.

2. The system covers end – to -end academic process pertaining to the University, institution and students.

3. Complex workflows in the system were addressed without any loopholes.

Controller of Examinations, **The Tamil Nadu Dr. M.G.R. Medical University using College Management System Application**

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e-GOVERNANCE INITIATIVES