**Department of Information &
Communication Technology
Govt. of Mizoram**

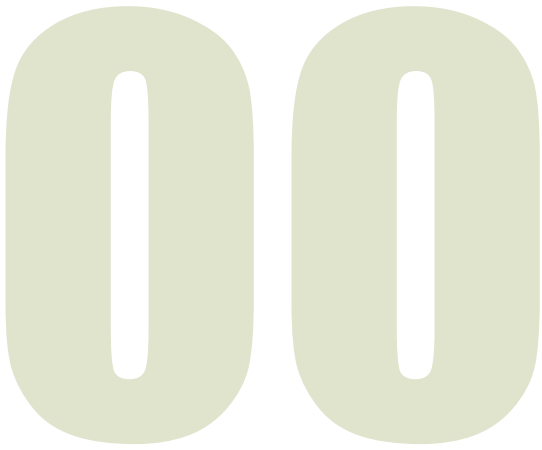सत्यमेव जयते

C M S
Content Management System

http://dict.mizoram.gov.in

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Preface

(ICT Department Website using GoM-CMS v2)

Government of Mizoram Content Management System (GoM- CMS) is a state initiative Web Content Management System, (a website framework which is used to create websites) a project taken up by the Department of Information & Communication Technology.

The GoM-CMS is developed in-house by a technical team of the Department of ICT and the system is based on FOSS (Free Open Source Software System), due to which the government did not spend any amount for the development of system. The system is developed as per the Government of India Website Guidelines.

The system is user friendly and employees without any IT background can manage their departmental website which is created using GoM-CMS. The Department need not recruit new employees specialized in Information Technology for the creation of the departmental website. However, the employees need to be trained at least two days wih hand-on experience to be fluent in GoM-CMS.

The monitoring of reports for all websites under the Government of Mizoram are usually prepared three (3) times a year, which is then submitted and reviewed before the meeting of Secretaries under the chairmanship of Chief Secretary of Mizoram. The Chief Secretary then issued letters to all website owning departments for further actions, if necessary.

It is envisaged in coherent with the Digital India programme. This project is important to the state as it will help in creating an automated workflow system for the web administration for all departments of Government of Mizoram and helps in providing efficient and valuable services through their websites which would be their primary objective.

01

Overview

Background

Before the introduction of GoM-CMS, websites of various departments under the state government were developed using Open Source CMS such as Drupal, Joomla, WordPress, etc. These Open Source CMS required regular update, which were not performed by various deupartments that caused bugs/security loopholes. Due to the security loopholes in the Open Source CMS, many departments faced several issues like SQL injection, backdoor entry, etc. The department's websites were frequently defaced by the hackers resulting in the defamation of the government as a whole.

Moreover, various departments developed their websites without referring Govt of India websites guidelines and hence resulting in a lack of commonality and standardization of the department's websites. Therefore, the usability of department websites were very poor and the citizens often find it difficult to locate the required information. The problems of centralization and uniqueness of departmental websites under the Government of Mizoram in terms

(ICT Department Website using GoM-CMS v1)

of the Layout, Features, Contents, etc were missing. The common training could not be conducted for those departments because of the use of different CMS and softwares.

Initiative

In view of past experiences, the idea for development of a common template which would bring common looks, layout, features and uniqueness to departmental websites of Government of Mizoram was initiated by the Chief Secretary of Mizoram during the year 2012. Therefore, the Department of ICT was entrusted to take the initiative for the development of GoM-CMS.

Development

In order to streamline the management of Government websites, the Department of ICT designed the common template which was then proposed to be used by all the departments and its offices. Accordingly, Government of Mizoram Content Management System (GOM-CMS) Version-1 was then developed by the Website Management team of ICT Department.

With the help of GoM-CMS, all government departments are requested to make their own websites for providing various government services and information accessible to the citizens. A government website is a platform on which vital information about the Departments are readily available and accessible to citizens for 24x7 hours and it also serves as a mechanism or machinery for the purposes of delivery of services, transparency, responsiveness, grievance redressal, good governance and also achieving paperless office.

Implementation

The GoM-CMS was launched on 20th July 2012 and implemented across 141 departments / PSUs / Societies / Institutions. The department of ICT did not charge any license fees nor domain registration and hosting charges. In order to implement GoM-CMS successfully, all the departments are requested to constitute Website Management Teams and appoint Web Information Manager to look after their respective websites. The Department of ICT carried out security auditing of the vulnerabilities, threats and risks that existed in the departmental websites using OWASP (Open Web Application Security Project) model. The security audit reports have been generated for all the 141 websites and no single security threats have been found. Therefore, it can be proudly mentioned that the GoM-CMS based websites are free from vulnerabilities and security threats as the defacement of websites from various user departments have not been reported till date since the date of its implementation.

The GoM-CMS is designed as a citizen centric system, the features and modules integrated in the CMS focused on the needs of the citizens for accessing Government as well as departments for providing various e-Services in efficiently and effectively. The system is also user friendly for the citizens as well as the website management team of the user department. The GoM-CMS is

also implemented across all the District Administration, Sub-Divisional and Block Offices.

Standardization & Compliances

The GoM–CMS complies with the Government of India Website Guidelines adopted by the Department of Administrative Reforms and Public Grievances, Government of India.

The GoM-CMS also complies with a Web 2.0 standard that allows users to interact and collaborate with each other in a Social Media dialogue as creators of user-generated content in a virtual community, in contrast to websites where people are limited to the passive viewing of content.

The system also functions with Web Content Accessibility Guidelines (WCAG) 2.0 which covers a wide range of recommendations for making Web content more accessible. This ensure content accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity through a screen reader access software, etc.

02

Challenges Before

The major challenges before development of Government of Mizoram CMS were:

1. Websites of various departments under the Government of Mizoram were developed through an Open Source CMS such as Drupal, Joomla and WordPress etc., and it was difficult to recognize the difference between Government Websites and Private Company websites. Some departments developed fancy looking website while others were very simple, due to lack of uniform layout and guidelines for the websites of government departments.

2. Some of the departments did not accept and recognize the importance of websites for dissemination of information to the public even with the issue of Office Memorandum. The interface used for development and maintenance of Government websites were different from one another as it depended on the developer of the websites. This resulted in an unattended websites of many departments when concerned technical staffs were transferred from one place to another.

3. Departmental websites were maintained by the concerned departments with their own choice of system, officers and staffs looked upon the maintenance of websites as an extra work which resulted in irregular updates and poor maintenance of departmental websites.

4. Some departments often stated that they suffer from the lack of savy officers and staffs to develop and maintain their own website, because ICT Department had only provided Sub-Domain and C-Panel from http://mizoram.gov.in at that time.

5. Due to non availability of Content Management System for the state government many departments engaged themselves with private firms for developing their websites, which had incurred many financial losses for the government.

6. Before the GoM-CMS was implemented, many departments had expected their website to be created and maintained by ICT Department. This gave them excuses which resulted in negligence in creation and maintenance of website.

7. At that time, the state had no Data Centre of its own. All the applications were hosted and backup at different locations by purchasing dedicated servers from other states of the country.

8. One of the important drawbacks of the departments was the absence of pressure from the public in demand for a reliable departmental website. This had affected the work efforts of officials in creation and maintainance of websites.

9. One of the major challenges inside ICT Department is the lack of adequate man power for the development and maintenance of Websites. Only three (3) technical officials were engaged for maintenance of websites.
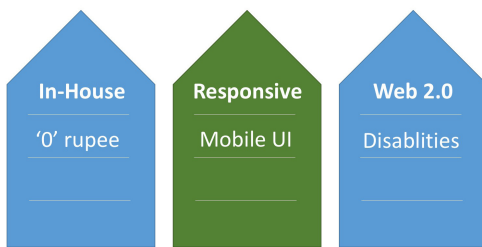
10. No officials were trained for advance web technologies. This is one of the challenges in creation and maintenance of government websites.

03

Objectives

Open Source

In-House	Responsive	Web 2.0
'0' rupee	Mobile UI	Disablities

1. The main objective of GoM-CMS project is to create an efficient system to disseminate information to the citizens by implementation of efficient electronic workflow to create transparency and accountability in the information dissemination process and reduction of workload of the departments.

2. Departments should develop their websites following an uniform layout using the GoM-CMS, so that citizens will be able to recognize the difference between government and other websites.

3. It provides user friendly website for departments which will be exclusively used by various sectors of the Government of Mizoram including departments, PSUs, Block Development Offices, Government Institutes and others.

4. In the GoM-CMS, the front end design and its back end system are intended

to maximize efficiency and simplicity in managing a full-fledged website/portal which will serve the government employees as well as the citizen.

5. GoM-CMS will function as a model technology for creating, maintenance and managing the official websites through which all departments will provide better information and other electronic services to the public.

6. More specifically, the GoM-CMS will allow the administrator to control all facets of the website including posting of information, documents and media management. Therefore, it will be user friendly for the technical in-charge in the department and allow easy data update using CMS.

7. A facility for communication between the users and the administrators will also be provided by using a grievance system/feedback form in the CMS which will be available to all the websites using the GoM-CMS.

8. The GoM-CMS has a modular design so that a new functionality can be added as and when required without breaking the integrity of the existing system.

9. Provision for secure CMS is one of the

important objectives. It may be mentioned that the defacement of websites from various user departments have not been reported till date since the implementation of the GoM-CMS.

10. The GoM-CMS has been developed based on e-Governance Maturity Model with an objective to provide quality services to the citizens for information dissemination, interaction, transaction, and transformation.
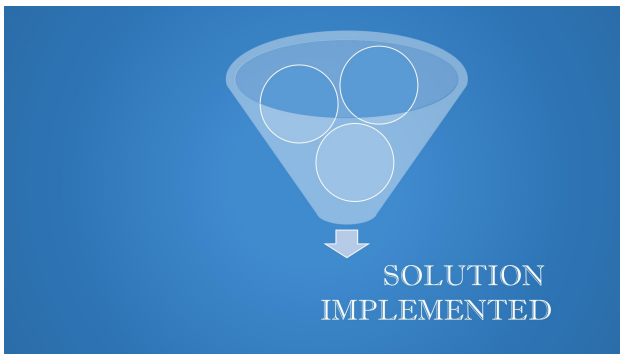
11. The GoM-CMS is designed with an objective to encourage all departments and its subordinate offices to maintain their own websites for providing information to the public.

12. In order to comply with the Government of India Website Guidelines, ICT Department advised all departments to make use of GoM-CMS for provision of information to the public through Primary Content (Compulsory), Secondary Content (Advised), and Tertiary Content (Optional).

04 Solution Implemented

SOLUTION
IMPLEMENTED

1. The GoM-CMS is developed and deployed using FOSS (Free Open Source Software) on a web platform with MVC architecture. The system is highly scalable and provides optimal performance. The solution architecture is flexible, interoperable, and secured. The OWASP Security features are well explored and embedded in the solution.

2. The GoM-CMS is incorporated with various modules as below:

A. Management

» Access Control Manager

» Modules Manager

» Template Manager

» User Manager

» Block Manager

» Post Manager

» Pages Manager

» Menu Manager

B. Government to Citizen (G2C)

» Public Grievances

» CSC GIS Mapping

» PHE SMS Blasts

» Citizen Online Support System

» Digital Document Distribution Manager

» Photo Gallery Manager

» Press Release

» Government News

» Notice Board

C. Government to Business (G2B)

» E-Tender

» Mizoram House Booking

» Cyber Café Registration

D. Government to Government (G2G)

» Quality Management System (QMS)

» E-Gazettes

» Forensic Laboratory Module

» Notification

» Circular & Order

» Event Module

E. Advisory

» SMS Module

» E-Mail Module

3. The GoM-CMS complies with the Accessible India Campaign (Sugamya Bharat Abhiyan), a Nation-wide Flagship Campaign for achieving universal accessibility which will enable persons with disabilities to gain access to equal opportunity and live independently and participate fully in all aspects of life in an inclusive society through Screen Reader access software.

4. The GoM-CMS is also in compliance with OWASP security standard which was carried out by in-house software testing team from Mizoram State e-Governance Society (A Society under the Government of Mizoram).

5. The GoM-CMS has a common Graphical User Interface (GUI) for different sectors of the departments and its offices under the Government of Mizoram. This gives the user the confidence in knowing that the website was created and owned by government.

6. News, circular, orders, notification, press release and events of the government are prominently highlighted and updated in all the front pages of the websites. The Government's news are fed through online information provided by the Information & Public Relation Department, Government of Mizoram.

7. There is a 100% compatibility with HTML, XML and CSS standards specified by W3C.

8. The GoM-CMS is incorporated with SMS Gateway and e-Mail facilities to provide notifications and alerts.

9. The GoM-CMS is also mobile device compatible. Mobile users have different graphical user interface designed solely for mobile devices which gives them better access and user friendly information architecture.

10. The citizen Interaction module is also provided using feedback forms, grievance systems and links to other social media pages.

11. There is a media manager for uploading and displaying images / videos etc. on the back end of the system. These contents can be displayed as photo gallery, image sliders and also in the pages and links at the frontend.

12. The GoM-CMS supports bilingual information both in English and Mizo. The built-in text editor supports both English and Mizo characters.

13. The GoM-CMS provides Government identity in the front end and backend as it follows the Government of India Website Guidelines.

14. The links of mandatory and other relevant important portals such as National Portal, State Portal, National Voter Service Portal, etc are provided by default. Other relevant links can also be provided on the basis of requirements.

15. The GoM-CMS is incorporated with Quality Management System (QMS) for easy storing and retrieval of important documents and letters reated to the departments which

is provided at the frontend and backend.

16. The GoM-CMS provides the streamlining theme for the State Government Departments website such as displaying the State Emblem or National Emblem in case the State has adopted the National Emblem as its official State Emblem as per the 'State Emblem of India (Prohibition of improper use) Act 2005'. The Public Sector Organizations and Autonomous body should display their official logo on the Homepage of the website to show their identity.

17. Hackers all over the world are targeting websites owned by Governments and many instances of defacement of websites owned by the State Government and the Central Government have occured. Therefore, utmost care has been taken to make websites as safe as possible. A number of Guidelines on Security related issues are available for download in the official website of CERT-In (Computer emergency Response Team-India) www.cert-in.org.in. These are followed and in compliance with the GoM-CMS and no hacked reports have been made since the implementation of CMS.

18. The department spent zero financial cost for the development of Government of Mizoram Content Management System for providing common valuable assets to all the departments and its subordinate offices.
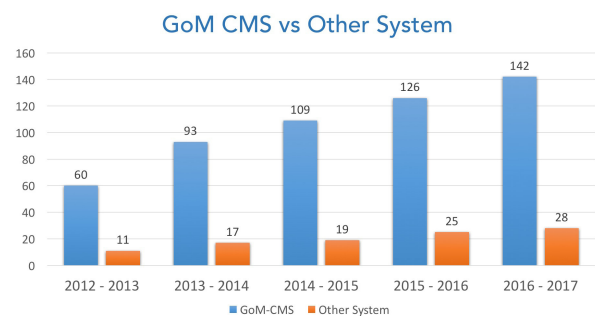
05 Coverage

1. The targeted populations at large are the citizens of India and the people of Mizoram in particular. Due to rapid advancement in the field of Information & Communication Technology and increasing availability of Internet facility at the door step, government websites have become vital interfaces between governments and citizens. As part of an effort to provide information to citizens on a 24x7 basis and promotion of good governance and transparency, 141 websites are using currently GoM-CMS which is 83.43% of the websites used by the Government of Mizoram.

2. The project covers employees of the entire state departments & their subordinate offices and PSUs/Societies undertaken by the Government of Mizoram.

3. The CMS provides a capability of developing bilingual websites which can display information both in English and Mizo. The built-in text editor supports both English and Mizo characters. Therefore the website will be useful for all the citizens living in urban areas and rural areas.

4. Urban digitization is also achieved through CMS wherein rich data is disseminated through departmental websites. It empowers the citizens with

GoM CMS vs Other System

insights that serve government and citizens alike effectively towards Good Governance.

5. The GoM-CMS provides Digital Communication between the government and its citizen for the general public through Citizen Interaction module which is provided using feedback forms, grievance systems and links to other social media pages.

6. The GoM-CMS Provides and support the Digital Access for the society toward equal digital rights and supporting electronic access through Government Websites.

7. Digital Security is also provided to the Citizens through the CMS, since the core template is highly secured by implementation with the use of Secure Socket Layer (SSL). Therefore all the Government Websites under this CMS are secured.

8. The websites of the government

department developed through the CMS act as a hub for all the interactions between the citizens and various service providers under the government departments as well as government employees.
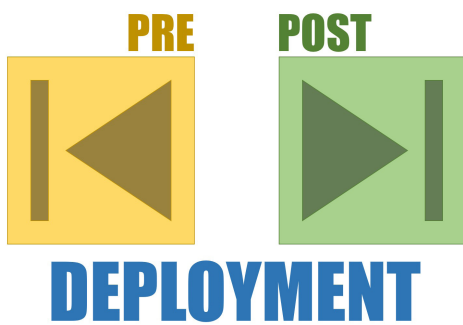
9. In Mizoram there are 8 District viz. Aizawl District, Champhai District, Kolasib District, Lawngtlai District, Lunglei District, Mamit District, Saiha District, Serchhip District and all the District Administrations have their own websites where every citizen in each district administration may utilize their website.

10. Out of 26 RD Blocks, 15 Blocks which have Internet Access have their own websites using GoM-CMS, which accounts to 57% of the rural population have an access.

06

Pre vs. Post Deployment

DEPLOYMENT

1. As stated earlier, in the pre deployment of the Content Management System of Government of Mizoram, websites of various departments under the Government of Mizoram developed their websites through a local developer by using an Open Source CMS such as Drupal, Joomla and Word-press etc. Therefore the financial involvements for the development of websites were very high.

2. After the deployment of CMS, websites of many departments under the Government of Mizoram are developed through the GoM CMS, which reduces expenditure and financial involvements as the CMS was deployed to various department at free of cost.

3. The GoM CMS brings a single graphical user interface for websites of government departments, and is designed as department centric. Most of the modules

integrated in the CMS focused on the requirements of various departments of Government of Mizoram.

4. The chronological allotment of domain, hosting and deployment Government of Mizoram-Content Management System are as follows:

Year	CMS	Other	Total
2012 - 13	60	11	**71**
2013 - 14	93	17	**110**
2014 - 15	109	19	**128**
2015 - 16	126	25	**151**
2016 - 17	**141**	**28**	**169**

At present, 141 Government websites are using GoM-CMS which accounts for 83.43% of the total websites. On the other hand 28 Websites are using other systems out of which 9 websites are custom tailor system developed in-house by the Department of ICT.

5. In the post deployment of GoM-CMS, all websites fall under the Government of Mizoram. CMS strictly followed the Guidelines for Indian Government websites in order to maintain equal standard and uniformity in websites under the Government of India. The 'Guidelines for Indian Government Website' was prepared

by NIC Headquarter and was adopted by Department of Administrative Reforms & Public Grievances, Ministry of Personnel, Public Grievance and Pension, Govt. of India.

6. In the post deployment of CMS, technical support for various Departments website such as Security and backend maintenance etc. can be done centrally from the Department of Information & Communication Technology, Government of Mizoram.

7. The post deployment of CMS enables a Single training for all user departments of CMS under the Government of Mizoram and also brings a single training course and materials for different departments at once, this reflect economical control of expenditure on website training of the Department as well as the Government as a whole.

8. Since the backend features and modules integrated in the CMS focused on the needs of departments of Government of Mizoram, the system is user friendly for technical staffs or individuals in-charge of websites. It resulted in a more regular update and better maintenance of the website.

9. After the deployment of CMS, ICT Department acts as a nodal department for centralizing and maintaining the CMS. All the updates of features and modules are done by the Website Management Team of the Department.

10. Since 2013, ICT Department has been performing "Observation and Monitoring of Websites under the Government of Mizoram" at least thrice a year and therefore findings and Comments from these observations proved to be useful for departments.

07

Key Learnings

1. The User interface of the Government of Mizoram - CMS brings similar design for all departments and offices of Government. It is specifically designed with efficient simplicity and confidence in mind to show the identity of the Government Websites.

2. The Government of Mizoram - CMS reduces time and task for maintenance and other technical support such as Security and backend maintenance. The backend features and modules integrated in the CMS focused on the technical user and staffs in-charge of websites.

3. A mass update of the Core template for the Content Management System of Government of Mizoram can be done at once by the Website Management Teams of ICT Department.

4. The Government of Mizoram - CMS has W3C validation on HTML and CSS and follows WCAG guidelines on screen reader accessibility, Contrast ratio and adjustable text for all websites under this CMS.

5. The implementation of this CMS enables a Single workshop and training for all departments with a distinct training course and materials for different departments. The capacity building expenditure of the

KEY LEARNINGS

Department for websites development are reduced.

6. As stated earlier, monitoring of website status for all government departments proved to be much easier because of the common theme for government websites. A report "Observation and Monitoring of Websites under the Government of Mizoram" is made at least thrice a year.

7. The GoM-CMS allows Dynamic Page creation and Management, Dynamic Menu and sub-menu creation and management for all the Websites.

8. An SMS Gateway for sending SMS to individuals and group members among the user departments is integrated with the Government of Mizoram - CMS.

9. Online Chat Facility for instant communication is provided by default in

the GoM-CMS, which will be useful for departments in interacting with the public.

10. Feedback/Grievance Redressal through Social Networking sites such as FB, Twitter and CPGRAM are also integrated with the CMS and are optional to the departments.

11. The CMS complies with standard Web Accessibility guideline for persons with disability and achieving the 'Sugamya Bharat Abhiyan', a nation-wide flagship campaign for achieving universal accessibility that will enable persons with disabilities to gain access for equal opportunity.

12. Quality Management System (QMS) for easy storing and retrieval of important documents and letters pertaining to department is also integrated with the Government of Mizoram - CMS by default, which is useful for internal communication and efficient Office management of the user Department.

13. The CMS is deployed only to government websites which is in compliance with Domain Name Policy of the government. All Indian Government websites must use '.gov.in' or '.nic.in' domain exclusively allotted and restricted to Government websites. For departments under the Government of Mizoram, websites can be hosted in Government of Mizoram domain i.e. '.mizoram.gov.in' or registered as '.gov.in' or '.nic.in'. Educational institution/ academy may use either '.edu.in' or '.ac.in' domain.
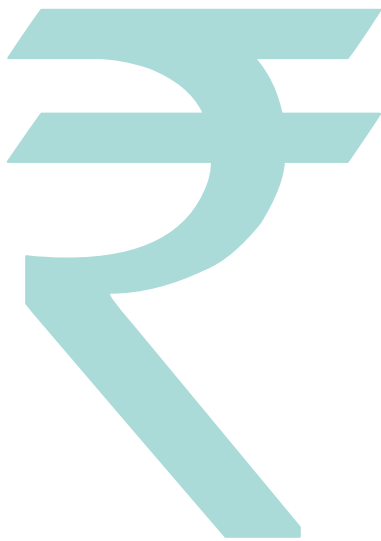
14. The CMS is also a mobile compatible, secure system and is in compliance with metadata standards. A metadata standard normally supports a number of defined functions, and specified elements which make these possible. A metadata standard supports the descriptive metadata which enables identification, location and retrieval of information resources by users, technical Metadata processes used to produce, or required to use a digital object. Administrative metadata manages administrative aspects of the digital object such as intellectual property rights and acquisition. User metadata manages user access, user tracking and multi-versioning information.

15. For allotment of GoM–CMS, there is no user charge for using the system and is deployed on a first come first serve basis.

08

Cost Effectiveness

Websites, all the departments have created Website Management Teams to look after their respective websites. Hence, there is no recurring expenditure for operation and maintenance of the Websites.

4. In pre GoM-CMS, the Government of Mizoram issued notification vide no. D.25016/1/2008-PLG(ICT) dated 12.11.2010 for hiring external agency for website development, operation and maintenance, etc. based on which the approximate commercial value for development of one website is given below:

1. The GoM-CMS is developed in-house by technical team of the Department of ICT and the system is based FOSS (Free Open Source Software System). Hence the Government Departments did not spend any amount of money for the development of software.

2. The department of ICT did not charge any license fees nor domain registration and hosting charges. However, the domain registration and hosting alone cost Rs. 7000 (approximate) per website in the consumer market.

3. In order to minimize the cost of operation and maintenance of Government

Website development cost	₹ 1,00,000
Operational and Maintenance per Annum	₹ 35,000
Domain Registration and Hosting of Websites per Annum	₹ 7,000

Based on the above estimated cost, the commercial expenditure for each website would be ₹ 1,42,000.

Year	CMS	Cost	Expenditure
2012 - 13	60	142,000	85,20,000
2013 - 14	33	142,000	46,86,000
2014 - 15	16	142,000	22,72,000
2015 - 16	17	142,000	24,14,000
2016 - 17	15	142,000	21,30,000

Total Estimated Expenditure : 2,00,22,000

From the above statement, the Government of Mizoram has a total saving of ₹ 200.22 lakhs for the development, operation maintenance, domain registration and hosting of government websites. The annual recurring expenditure for operation maintenance and hosting of websites for an amount of ₹ 59.22 lakhs is also being saved by the government.

5. Various G2C, G2B and G2G services can be availed through online resulting in time and cost savings both for the citizens and the government. The citizens can get the services from their home or nearest CSC (Common Service Centre) and RIK (Rural Information Kiosk) saving money and time spent in transportation. Since the government can now broadcast information to all the citizens on the website, it save time and expenses incurred on postal services.
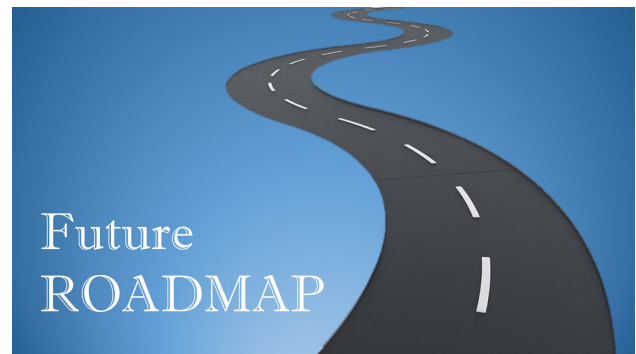
09 Future Roadmap

1. The Department has a vision to develop the Government of Mizoram - CMS Version 2.0 and an initiative has been taken up by ICT Department since 2015. It is also proposed to be used by various sectors of the Government of Mizoram including Departments, PSUs, Block Development Offices, and Government Institutes etc. The system is proposed to maximize efficiency and simplicity in managing a full-fledged website for technical employees and staffs in-charge of websites as well as the citizens.

2. During the testing stage of the development of CMS Version 2, Department of ICT conducted Security Hacking Competition during 2015 Digital India Week. Nearly 40 organizations/security experts entered the contest to find the vulnerability of the system. However, none succeeded in hacking the system.

3. In the upcoming GoM-CMS Version 2.0 the system will allow the administrator to control all facets of the website including posting of information, document and media management, form creation etc. There will be a facility for communication between the users and the administrators using a grievance system/feedback form. The CMS will have a modular design so that any new

functionality can be added without breaking the integrity of the existing system.

4. The CMS Version 2.0 is proposed to be implemented for all Government Department and its Offices and is proposed to be hosted at the Mizoram State Data Centre, a Three Tier Data Centre and an ISO Standard located at Aizawl.

5. The Government of Mizoram - CMS Version 2.0 is proposed to have the following key features:

» Robust user authentication including access control for different user types.

» Media manager for uploading and displaying images/videos etc. on the system. These contents can be displayed as photo gallery and image sliders on the frontend.

» It can display information both in English and Mizo. The built-in text editor supports both English and Mizo characters.

» There will be an instant messaging feature for easy and efficient electronic communication system for the user Departments.

» SMS and email based notification for form submission and tracking system as well as information subscription will also be implemented.

» There will be a facility for payment gateway integration and SSL support on a need basis.

» Citizen interaction will also be provided by using feedback forms, grievance systems and links to official Facebook pages in optional basis.

» Government and Departmental news will be prominently highlighted and updated in the front page through online information provided by the Information & Public Relation Department, Government of Mizoram.

» There will be a 100% compatibility with HTML and CSS standards specified by W3C. The CMS will be a mobile device compatible.

» There will be a centralized theme and GUI management for different sectors, units, and division of various Departments.

10 Award

In 2016, on account of its successful implementation, Government of Mizoram Content Management System (CMS) received Skock Platinum Award.