Current State Assessment Report

IT SCOPING
PILOT PROJECT
DEPARTMENT OF HEALTH AND FAMILY WELFARE
GOVERNMENT OF ORISSA

Submitted By,

WIPRO
Applying Thought

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Abstract: This document is an assessment of current state in Department of Health and Family Welfare, GoO. This document is the first deliverable in the IT Scoping Project for the department.

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Glossary of Terms

#	Term	Definition
1.	BPR	Business Process Reengineering
2.	DCA	Drug Control Administration
3.	DDC	Directorate of Drugs Control
4.	DESI	Directorate of Employees State Insurance
5.	DFW	Directorate of Family Welfare
6.	DICOM	Digital Imaging and Communications in Medicine
7.	DIMH	Directorate of Indian Medicine and Homeopathy
8.	DME	Directorate of Medical Education
9.	DMRHS	Directorate Medical and Rural Health Services
10.	DMS	Directorate of Medical Sciences
11.	DoIT	Department of IT
12.	DPH&PM	Directorate of Public Health and Preventive Medicine
13.	DPMU	District Project Management Unit
14.	DPR	Detailed Project Report
15.	DR	Disaster Recovery
16.	G2B	Government to Business
17.	G2C	Government to Citizens
18.	G2G	Government to Business
19.	GoI	Government of India
20.	GoO	Government of Orissa
21.	GPR	Government Process Reengineering
22.	H & FW	Health & Family Welfare
23.	HMIS	Hospital Management Information System
24.	HO	Head Office
25.	HOD	Head of the Department
26.	HRMS	Human Resource Management System
27.	HSC	Health Sub- Centres
28.	ICT	Information & Communication Technology
29.	ISDN	Integrated Service Digital Network
30.	KRP	Key Resource Persons
31.	MMP	Mission Mode Projects
32.	NeGP	National e-Governance Plan

33.	NGO	Non Governmental Organisation
34.	NICNET	National Informatics Center Network
35.	PeMT	Project e-Governance Mission Team
36.	PHC	Primary Health Centres
37.	PM	Project Management
38.	PMI	Patient Monitoring Index
39.	POP	Point of Presence
40.	PSTN	Public Switch Telephone Network
41.	RASI	Rural Access to Services through Internet
42.	RCH	Reproductive Child Health Project
43.	RDBMS	Relational Database Management System
44.	RFP	Request for Proposal
45.	SDC	State Data Center
46.	SeMT	State e-Governance Mission Team
47.	SLA	Service Level Agreement

Executive Summary

The Government of Orissa (GoO) is committed to improving health service delivery through enhanced equitable access to quality healthcare. The Orissa Health Sector Plan (OHSP) is Orissa's first integrated sector-wide implementation plan to achieve this goal. OHSP includes seven strategies for enhancing the capacity of the health system.

DFID provides sector Poverty Reduction Budget Support to the GoO. OHSP is implemented through the Orissa State Health Mission (OSHM) under the NRHM and the existing Health and Family Welfare Department (H&FW Dept.) Directorates. Overall responsibility for the programme is held by the Principal Secretary, H&FW Dept. GoO.

DFID has contracted a Technical and Management Support Team (T&MST) to work with the OSHM to achieve the health sector objectives. The Options-IPE Joint Venture, in association with CARE, was awarded the contract on 1 April 2008. Technical Assistance is provided from within a Core Team, short-term Resource Pool, or through Options-IPE procuring additional sub-contracts on behalf of the H&FW Dept.

E–governance is a principal mandate for the Govt. of Orissa. A large number of initiatives for public sector reform under Orissa Modernization of Governance Initiative (OMGI), implemented through OCAC-NIC. Due to competing causes, the DoHFW is low on the priority list in comparison to other Depts. of GoO. It is in this context, DoHFW intends to commission a reputed agency to assess the ICT needs and current situation of different wings of the DoHFW and set out a roadmap for common IT Interface integrating different IT interventions across the Department for Health and Family Welfare (DoHFW).

This Report presents an overview of the department through its objectives and organizational structure and identifies the key functions of the department. The Report assesses the existing status of the department. The Report analyzes the key

challenges facing the department in areas of G2C and G2G functions and identifies the issues that need to be addressed through the IT scoping project.

Wipro has employed an established 'Process Improvement approach" framework comprising six stages viz. Objective Setting, Data Capture, Analysis of data, Prioritizing, Synthesizing and Developing Roadmap to meet the project deliverables. A participatory approach has been adopted to identify the existing stakeholders, process steps, information flow (data capture and movement), inputs and output for the process and potential improvement areas in the processes. The concern areas, needs and expectations of the stakeholders have also been captured. All this has been achieved through meetings, focused group discussions and data collection through structured questionnaires, checklist, etc. The data captured in this phase will help to understand the present delivery mechanism of the services along with actors and participant involved in service delivery. Also, present level of automation along with level of preparedness of IT infrastructure and HR capacities pertaining to ICT intervention have been captured so as to establish the areas of concern if any.

The As-Is study for the selected services has been completed successfully in districts of

The given list of services was prioritized using 'Quality Function Deployment' (QFD) prioritization matrix and specific sub-services were selected in discussion with the district and state government. The outputs in terms of process maps for all the selected services have been created and affirmations on the processes have been taken from concerned departmental heads.

The major findings of the 'As-IS' study could be summed up as:

• Processes under study were well defined through appropriate policies, guidelines, act, rules, government orders, departmental orders and local order.
• Existing processes shows variation based on the local condition, interpretation, etc but at the same time maintaining the nuance of the standard procedures as defined through appropriate legal instruments.
• Processes captured are hybrid (manual & workflow based IT) and also paper driven. There were number of duplications and repetitive activities.

• Island of information existed in isolation within departmental functions but the same is not being shared commonly across departments creating redundancy from administration perspective.
• Although hardware is provided till the village level still they are not used for any of the identified processes due to connectivity.
• The number of inputs for process initiation is quite high and different departments and different districts have different standards for acceptance.
• IDSP Software and HMIS are the applications software used for DoHFW. Both the applications need to be developed further in order to scale up the services and the operation process.
• No proper IT infrastructure in terms of connectivity and consumables. And power problem exists at the village level.
• There are small IT applications running at departmental levels in many departments.
• Departmental databases are available at various levels and not centralized.

Based on the 'As-Is' study, in the second stage of Phase I, 'To-Be' processes would be designed by filling the gaps in the existing system. The proposed 'To-Be' processes would be developed keeping in view and addressing the identified pain area and integrating technological construct thereby automating the process flows for such services. This would further ramify into development of Functional Specification Requirement and System Specification requirement for development of the software application. Thereafter, in the third stage actual development of the software would be carried out. At the same time, this would thus provide specific inputs for changes to be brought in by the government at various levels for providing favorable and supportive policy and legal framework for proposed solution for the services covered under the DoHFW project.

Introduction (Chapter 1) section of this document details the background and scope, goals & objectives of the project.

Chapter 2 presents an overview of the department. The objectives, functions/services and the organizational structure of the Department are detailed. The section also presents the stakeholder analysis for the department. Identifying the stakeholders of

the department and understanding the key needs of the various stakeholders provides with distinct needs that have to be addressed by automation.

Chapter 3 starts with the Current State Assessment of the services and programmes of the department. It covers the major business processes of the department. Step-wise explanations of each Activity i.e. the nature of Information, its Flow mechanisms, its utilization at various levels, controls & monitoring mechanisms etc. is also covered. Chapter 4 covers the People situation of the department whereas Chapter 5 identifies the existing IT infrastructure (Software, Hardware, Network etc.) available within the department.

Chapter 6 identifies the Best Practices adopted by other organizations/states involved in delivering health services to the masses. Both National and International initiatives have been covered in this category. The Study of "Best Practices" allows us to benchmark the existing system and gives a pointer towards the "To-Be" system. Documenting best practices can be useful in formulation of strategies to improve the performance through increased competitiveness. Primary and Secondary data were collected through these discussions and also from documented reports of initiatives in the states concerned. The identification, analysis and comparison of information in terms of performance of the employment services in national and international scenario will help in the adoption of the best management systems, technology and practices.

The data and information was studied, analyzed and finally lessons have been derived which will help the department to develop more efficient health service. The understanding of current scenario and analysis of best practices, points out the 'Gaps' in the existing departmental system. This is covered in Chapter 7 of the report.

Chapter 8 covers the key recommendations for DoHFW and Chapter 9 covers the way forward.

1 Introduction

The Orissa Health Sector Plan (OHSP) is Orissa's first integrated sector-wide implementation plan to improve health service delivery through enhanced equitable access to quality healthcare. OHSP includes seven strategies for enhancing the capacity of the health system. DFID provides sector Poverty Reduction Budget Support to the GoO. OHSP is implemented through the Orissa State Health Mission (OSHM) under the NRHM and the existing Health and Family Welfare Department (H&FW Dept.) Directorates.

Under the reforms mandate of GoO in the health sector, the present initiative has been undertaken which targets to commission a reputed agency to assess the ICT needs and current situation of different wings of the DoHFW and set out a roadmap for common IT Interface integrating different IT interventions across the Department for Health and Family Welfare (DoHFW)

1.1 Project Objectives

The primary objectives of DoHFW to come up with the IT scoping study covering:

- Areas, activities and processes where IT interventions are on and to assess its scope and extent of intervention, to establish a forward and backward linkage with the overall IT strategy of the DoHFW and to establish requisite network protocol and system architecture in place.

- Identification of key areas, activities or processes which require intervention of Dept. Of Health and Family Welfare and to lay down a strategy to facilitate the same in alignment to the overall IT under other departments like Planning and Co-ordination, WCD, RD, Panchayati Raj and OMGI-OCAC Strategy of GoO.
- Upload Key areas of ICT interventions and outputs into the DMHFW website to make it web-based technology.

1.2 Scope of Work

The scope of the study and consultancy phase in terms of the deliverables is as detailed below:

Deliverable	Description
Inception Report	• Describes the structure and composition of DoHFW and various functions. • Identifies the existing hardware, platform, software and network components that are currently in place and in use by DoHFW & its associated functions • Identifies the existing systems and applications that are currently in use • Understands the interface of the DoHFW with other departments and the level of interaction and the current ICT and non-ICT systems used by them • Understands the structure and composition of the IT personnel responsible for planning implementing, operating and maintaining the IT infrastructure. • Understands the extent of IT and related

Deliverable	Description
	process development and rollout, policies and procedures
Gap Analysis & Target Envisioning Report-Mid Term Report	• Outlines the business factors (e.g. business plan/outlook, goals, vision) that will determine the IT needs and setup of DoHFW • Defines and aligns the IT goals and objectives of DoHFW based on the existing and envisioned business factors • Outlines the gaps between the current state and the envisioned IT setup • Outlines the existing issues and challenges that must be addressed to achieve the envisioned IT setup
IT Strategy and Roadmap-Final Report	• Identifies the IT goals and objectives of the DoHFW, GoO which must be aligned with the organizational goals and objectives • Identifies the hardware, software and network components required to achieve the IT goals and objectives • Identifies the manpower, skills and expertise required to plan, implement, operate and maintain the envisioned IT setup • Defines a roadmap and timetable for the implementation of IT initiatives leading to the accomplishment of the organization's IT goals and objectives. • Defines the Project Cost, financial

Deliverable	Description
	implications of the proposed IT initiatives and ROI. • Define training needs and requirements for senior management, functional users and IT professionals of DoHFW with respect to the implementation strategy • Define Change Management requirements by taking into account existing procedures, process etc detailing the objectives, scope, risk plan, assumptions, expectations, concerns, issues, work breakdown structure, critical path, interdependencies, roles & responsibilities
Terms of Reference (TOR) for three prioritized areas	• A customized Terms of Reference (ToR) document, which identifies in great detail the requirements, specifications, functional requirements, system requirements, scope of work for the implementation partner, system sizing and feature sets that is required for the implementation of three prioritized areas as identified in consultation with TMST & DoHFW.

1.3 Methodology Adopted For As-Is Process Study

1.3.1 Identification of services

The conceptual design for identification of the services is focused on the service delivery and not computerization of department or division of the Authority. The objectives of the project are to create a smart link / interface between citizens, governments, public utilities and other information providers. All the independent departments of the authority were studied. List of services were identified.

1.3.2 Prioritization of Services

To initiate the process improvement exercise, a prioritization exercise was undertaken to select services to be covered under the project. This prioritization is based on defined criteria's like Volume, Importance for Govt., Availability of Quality data, Potential for levying user charges, Potential improvement in service level, Replicability and Level of Automation. The following approach would be adopted for prioritization –

· A Six Sigma tool, 'Quality Function Deployment' (QFD) is used to prioritize the automation of services.
· Critical to Quality (CTQ) factors are identified based on needs and mandate. CTQ are the factors essential for delivery of any service.
· CTQ are given weight age, based on their criticality, on a scale of 1 to 5, where more than one CTQ could have the same weight age.
· Each service is then rated on the scale as under:
_ High correlation - 5
_ Medium correlation - 3
_ Low correlation - 1
_ No correlation – 0
· For each service, the composite score is arrived at with the sum-product of the

Rating (of the service on a CTQ) & the Weight (of the CTQ)

· Composite score for all the services is used to arrive at the priority order of the services

1.3.3 Services Analysis

This section provides the overall approach and methodology carried out during the As-Is phase of DoHFW. Detailed information pertaining to workflow of the various processes involved in delivering the services, mentioned above has been captured in the As-Is study phase. As part of this stage, exhaustive data capturing exercise has been undertaken keeping in view of 3 major elements - People, Process and Technology. During the As-Is Study phase, meetings were conducted with various sections and departments and also with the process owners to understand the vision, objectives and major functions of the department and also to understand the key processes at a macro level.

· To study the workflow of activities
· To study the IT readiness and the existing IT infrastructure
· To identify the Concern areas
· For Documentation and validation

The above activities were carried out through One-to-one meetings, Focused Group discussions and completion of Questionnaires.

A participatory approach is adopted to capture and identify the potential improvement areas in the processes. The concern areas of the Stakeholders and process owners have been captured so as to develop comprehensive solutions. This will enable to understand the present service delivery mechanism of the services along with actors and participants involved in Service delivery. Also, at the same time, this will establish the inputs and outputs at various process steps. All documentation and information flow is captured during the process study so as to establish data requirement at process steps. Also, present level of automation along with level of preparedness of IT infrastructure and people capacities pertaining to ICT intervention will be captured so

as to establish the areas of concern and hence develop suitable strategy through IT infrastructure planning and enhancement of HR capabilities.

1.3.4 Data Collection

Various data collection toolkit was employed in DoHFW project. The objective was to achieve detailed collection of information / data required to effectively meet the stated objective of the project. Following data collection method were adopted by the consultant for the project.

· Focus Group Discussion
· Process Workshop
· Personal Interviews
· Questionnaire to capture
· Checklist for gathering process information

Focus Group Discussion: Focus Group Discussion was conducted with departmental officials and resource person for various departments. This helped to understand the nuances of the process and deviation of the process from stated standard process flows for the service.

Personal Interviews**:** Personal interview were conducted at various level of departmental hierarchy. The interviews were conducted with the perspective of understanding the existing operational context of service delivery for the selected services.

Questionnaire & Check-list**:** A standard questionnaire was developed with the purpose of collecting all required information related to service.

Process Checklist: A process checklist was used for vetting the information captured during the entire exercise and also ensures no information is missed during the felid study.

2 Department Profile & Stakeholder Analysis

The State Government is making constant and concerted efforts to formulate and execute schemes for providing adequate health care services to the people of Orissa. Simultaneously, steps are being taken to improve the existing health care system in the State through various measures. Special attention is being given to address the health needs of the people in the tribal and backward regions of the State. The State Government have set up an Infant Mortality Reduction Mission with the objective of reducing IMR substantially and Navajyoti Scheme in 14 backward and tribal districts to reduce morbidity and mortality.

National Rural Health Mission (NRHM) has been constituted in the State with the main objectives to provide comprehensive integrated health care to the rural and vulnerable sections of the society. In order to have better management of primary health care, the practitioners of Ayurveda, Unani, Yoga, Siddha and Homoeopathy are being brought under the mainstream.

For providing basic health services to the people throughout the State, particularly to the rural and urban poor, 183 CHC-Is, 48 CHC-IIs, 121 Block PHCs, 1162 PHC(New)s, 90 Mobile Health Units (in the 8 KBK districts), 165 other hospitals and 6374 Sub-centres (ANM centre) are in operation. Besides, 619 Ayurvedic, 560 Homoeopathy and 9 Unani Dispensaries are also functioning in the State.

There are 30 District Headquarters Hospitals, 2 District level hospitals, 22 Sub-Divisional Hospital and 10 Special Hospitals (TB? 4, Leprosy? 1, Paediatrics-3, Maternity-1, Eye-1) functioning in the State.

A number of National Health Programmes are in operation in the State to combat communicable, non-communicable and other major diseases. The most important among these programmes are the National Rural Health Mission (NRHM), National

Leprosy Eradication Programme (NLEP), National Anti-Malaria Programme (NAMP), National Aids Control Programme, Revised National Tuberculosis Control Programme (RNTCP), and National Programme for control of Blindness (NPCB), National Filaria Control Programme and National Iodine Deficiency Disorders (IDD) Control Programme. Successful implementation of these National Programmes helps to reduce the mortality and morbidity and contribute to improving the quality of life of the common man.

2.1 Objectives of the Department

The major objectives of the Department of Health and Family Welfare are:

- To provide adequate and qualitative preventive and curative health care to the people of the State
- To ensure health care services to all, particularly to disadvantaged groups like Scheduled Tribes, Scheduled Castes and the backward classes.
- To provide affordable quality health care to the people of the State not only through the Allopathic system of medicine but also through the Homeopathic and Ayurvedic systems.
- To ensure greater access to primary health care by bringing medical institutions as close to the people as possible or through mobile health units, particularly in the under-served and backward districts.
- To improve health care in the KBK districts of the State.
- To improve maternal and child health with a view to reducing maternal and infant mortality.
- To improve hospital services at the secondary and tertiary levels both in terms of infrastructure and personnel.
- To give training to doctors, nurses and other paramedical staff to meet the needs of health care in the State by upgrading their skills and knowledge.
- To improve the maintenance of buildings.

2.2 Functions of the Department

The functions performed by the Department of Health and Family Welfare are:

2.2.1 Functions:

- Providing medical care to the needy including drug distribution and control, monitoring of diseases and taking preventive measures.
- Administration of Medical Colleges, Medical College Hospitals, Non-Medical College Hospitals, Indian System of Medicine Hospitals, PHC's and HSC's across the state.
- Regulating drug production and distribution.
- Issuing certificates, licenses etc. to pharmacies and testing for spurious drugs.
- Control and supervision of all private medical colleges and medical colleges.
- Conducting various medical exams, publishing results and issuing certificates.
- Teaching- learning process.
- Collection and maintenance of various data types which give an idea of the health profile of the state.
- Planning, executing and monitoring various projects and programs.
- Training to the community and the staffs and research.
- Policy formulation.
- Servicing and Maintenance of vehicles involved in medical care (ambulances etc.) in good running condition.
- Spreading awareness about various diseases, preventive measures etc.
- Inventory Management (Drugs, Vehicles under Health services, and others)

New Initiatives:

Under the new initiatives the NRHM is performing the following:

- NRHM initiative provides for a female Accredited Social Health Activist (ASHA) who acts as the interface between the community and public health system.
- Upgradation of C.H.C.s as per Indian Public Health Standard.
- First Referral Units have been functioned for increasing institutional delivery.
- Rogi Kalyan Samiti has been formed to provide sustainable quality health care with accountability and people participation.
- Gaon Kalyan Samities have been formed to undertake various development activities related to health and sanitation at village level.
- Reproductive & Child Health (RCH) Programme-II is an ongoing programme under NRHM with the objective of improving the Reproductive health of men and women and the health of children from 2005-10.
- RCH Camps have been undertaken in all districts.
- Under Tribal Health, Swasthya Melas in tribal blocks and ambulance services have been provided to the inaccessible blocks of Mayurbhanj, Sundargarh and Keonjhar.
- PHC(N) are being managed by NGOs/Private Agencies amongst remote and hard to reach areas of districts
- Urban Health Project has been launched recently in Cuttack, Balasore, Khurda, Rourkela and Sambalpur.
- Janani Express have been launched to provide transport facilities in the rural areas which carries mothers to the health institutions.

2.3 Services Offered by the Department

The services rendered by the department can be broadly classified in three categories Viz. Govt. to Citizen (G2C), Govt. to Business (G2B) & Govt. to Govt. (G2G).

Govt. to Citizen (G2C)

Sl.	Service
1.	Access to information regarding the various clinical/non clinical services offered from various hospitals, dispensaries
2.	Provide elaborate and readily available information of district wise allocation of funds earmarked for the implementation of the various centrally sponsored schemes for detection; prevention and eradication of Diseases covered under the National Health & Family Welfare Programmes.
3.	Information on the number of beds available & doctors attached to the different Hospitals in the State.
4.	Availability of information on the latest notification on approved brands of drugs.
5.	Information on the updated list of medicine stock at the Dist Head Quarters
6.	Access to all necessary information of the department with minimum physical interaction
7.	Faster Turn Around Time of Services
8.	Efficient mechanism for filing appeals, grievance redressal and speedy disposal of appeals.
9.	Availability of clinical care “anytime anywhere” with minimum cost head on the citizen.
10.	Generate public awareness especially on reproductive health, HIV, AIDS, epidemics, communicable & non-communicable diseases preferably in local language for the benefit of poor and illiterate patients. Details of NGOs and Hospitals engaged in care and rehabilitation of patients suffering especially of

Sl.	Service
	HIV & STD cases should be available for reference and timely action

Govt. to Employee (G2E)

Sl.	Service
1.	Simplification of the HR and payroll Administration of the department.
2.	Faster processing of disciplinary issues.
3.	Capacity building of the KRPs through training on technical lines and strengthening the institutional capacity building framework.
4.	Greater transparency and accountability in the system to bring credibility to the intra- departmental processes.
5.	Performance incentives for motivation of the Project Team and the Operational Team
6.	Strengthen the head count in the service delivery front to avoid backlog and delivery of services in front line offices
7.	Upgrade the current software for greater user- friendliness

Govt. to Government (G2G)

Sl.	Service
1.	Efficient Administration of internal offices procedures and functions
2.	Efficient Administration and Enforcement of Acts, Rules and Procedures
3.	Efficient scheme planning, monitoring and beneficiary identification process.
4.	Maintaining accurate and up to date records pertaining to health across the state.
5.	Seamless information sharing and exchange with other departments.
6.	Better monitoring of the functions of the clinical care institutions be it Government owned or Private Nursing homes or Hospitals
7.	Accurate data and scheme statistics for the GOI and bodies like WHO
8.	Information exchange with other GoO departments (E.g.-Education dept. for School health Programmes etc.)

2.4 Organizational Set Up for Health at State Level

There are two levels:

1. Secretariat
2. Directorates of different wings of Health

Secretariat Level

The portfolio of health and family welfare department vests with a minister of cabinet rank. The department is headed by a Secretary belonging to Indian Administrative Service. Assisting the Secretary (H) is an Additional or Joint Secretary of IAS Cadre and Deputy Secretaries, Under Secretaries and other office functionaries. The Department of Health at the secretariat level is concerned with the formulation of polices besides dealing with all legislative matters including the framing the rules and regulations on matters of health and health administration. The Secretariat also helps the Health Minister in the discharge of his responsibilities to the legislature by providing necessary information and assisting the preparation of health budget. All important proposals and schemes relating to health are submitted by different directorates for approval and sanction of the secretariat. It also broadly supervises, regulates and controls the issuing of the notifications, circulars, memoranda and government orders. The Department besides receiving periodic reports and returns reviews the progress of work through meetings etc.

Directorates Level

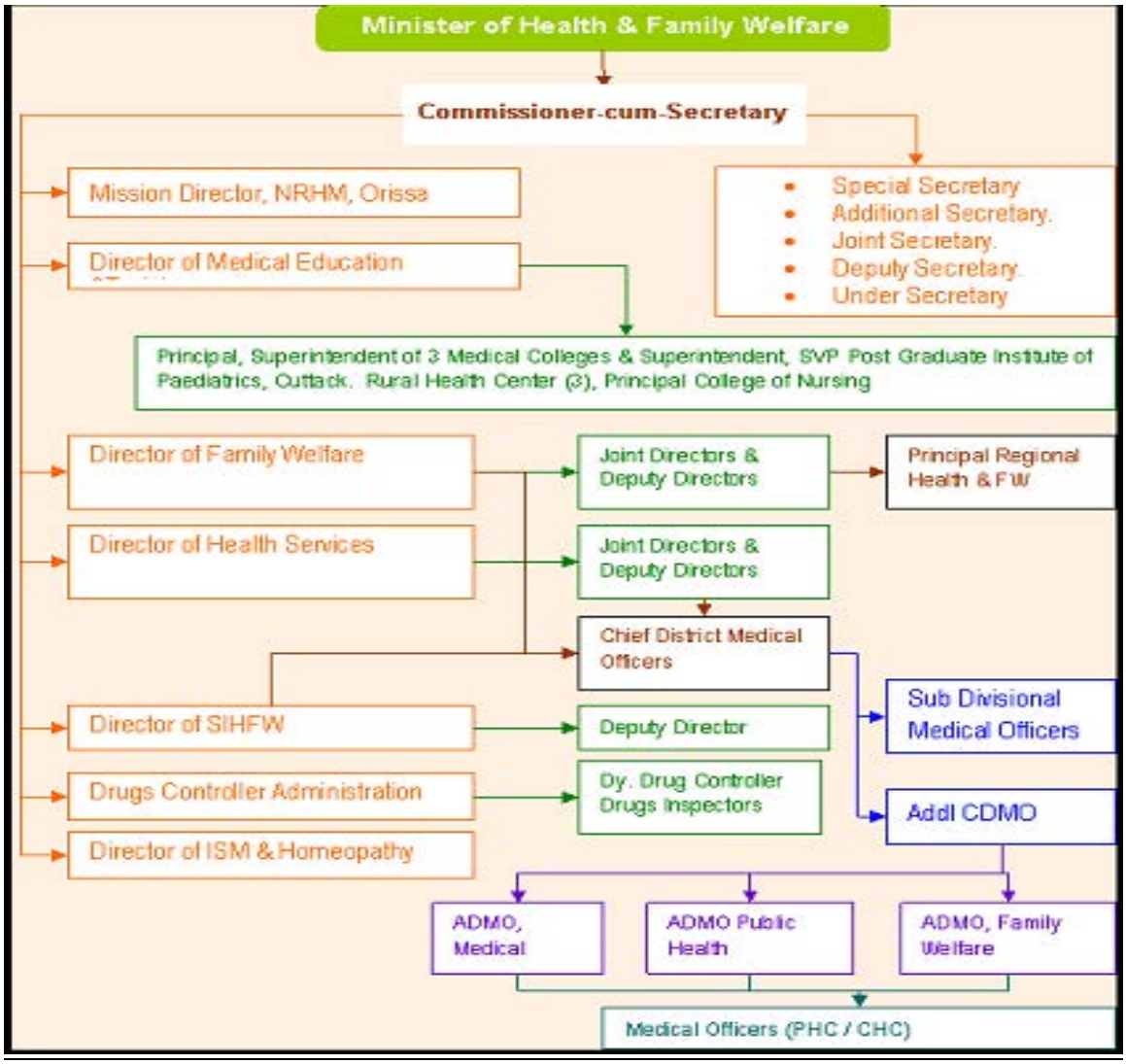
The Directorates function as technical wings of the State Department of Health and Family Welfare. These Directorates are responsible for implementing the health policies of the state government by maintaining proper technical standards. The following Directorates are functioning in Orissa in the Health and Family Welfare Department.

1. Directorate of Medical and Rural Health Services
2. Directorate of Family Welfare
3. Directorate of Medical Education and Training
4. Directorate of Indian Medicine and Homeopathy
5. Directorate of Drug Control Administration
6. Directorate of SIHFW

7. Mission Director, NRHM
8. Orissa State AIDS Cell

2.4.1 Organization and Structure of the DoHFW

The health department in the state of Orissa is divided into seven directorates and corporations dealing with various aspects of medical care. The Organizational structure of the department is:



The following Directorates and Corporations are functioning under the control of Department of Health and Family Welfare:

Sl No	Directorate / Corporations	Description and Functions
1.	Directorate of Medical Education and Training	The Directorate plays a pivotal role in improving the "Education" in the field of Medical Science and impart training to medical personnel in the state which involves under graduate, post graduate medical students, training of paramedical & Nursing personnel (both in degree& diploma) and other related health programme.
2.	Directorate of Drug Control Administration	The Directorate of Drugs Control Admn. is functioning in the building of "state drugs testing and research laboratory" situated at Gajapati Nagar, Bhubaneswar, Orissa. Established in the year 1947 under Directorate of Health Services and became an independent Directorate since 1982. Drugs are the greatest weapon of mankind to fight diseases and death and Drugs Control is the only tool to ensure highest quality and purity of
3	Directorate of Health Services	Director of Health Services, Orissa being the Heads of Deptt under the administrative control of Health & F.W. Deptt of Government of Orissa occupies a distinct position in the Health care service administration of the State pertaining to promotive, Preventive and Curative aspect of the State. While State Government in Health & F.W. Department formulate policies, the Director of Health Services, Orissa being the Heads of Department execute all Health policies. The National Health Programme like:- (1) N.P.C.B (2) Yaws Control Programme (3) N.L.E.P (4) N.M.E.P (5) N.F.C.P (6) N.M.H.P (7) R.N.T.C.P (8) Goiter controls Programme are also being executed in the State under the active control and supervision of Director of Health Services, Orissa.
4	Directorate of Indian Medicine and Homeopathy	The Director, Indian Medicines & Homeopathy, Orissa is the Drug Licensing Authority for ASU (Ayurveda, Siddha & Unani) drugs in the state. Three Government Ayurvedic pharmacies and one mini Homeopathic pharmacy have been functioning under the Directorate for manufacture & supply of medicines to

Sl No	Directorate / Corporations	Description and Functions
		hospitals and dispensaries in the state. .
5	Directorate of Family Welfare	Directorate of Family Welfare is one of the leading Directorates functioning under Health and Family Welfare Department of Govt. of Orissa as an administrative agency of Family Welfare programme of the State. The principal objective of the Directorate is to stabilize the population and to provide Health services including (Immunization) to both pregnant mother and children. Since last 48 years the Family Welfare Programme is being implemented in the State with financial assistance of Govt. of India.

* Source: DoHFW website

2.5 Stakeholder Analysis

Stakeholder analysis is the identification of a project's key stakeholders, an assessment of their interests, and the ways in which these interests affect project risks and viability. It is linked to both institutional appraisal and social analysis. Stakeholder analysis contributes to project design, and helps to identify appropriate forms of stakeholder participation.

It is an accepted paradigm that e-Governance interventions should bear its inception from the needs of the stakeholders. The major stakeholder in the department is the common citizen who has to interact with the department for availing the benefits of medical care. As s result, all efforts of streamlining the processes of the department to improve the service standards through IT enablement should take due cognizance of the expectations of the stakeholders. The other dimension of e-Governance is the G2G element where the department aims to benefit from e-Governance by increasing its own efficiency and competency to elevate its service delivery standards. The objective behind introducing e-Governance is to effectively deliver services to the citizens in minimum time leveraging the use of ICT and concomitantly increase its own internal efficiencies.

Stakeholder-Identification

The table below lists some of the identified stakeholders of the health department.

Patients	General Public/Citizens	Govt.(LSG/State/ National)
Senior Officers	Allied Departments	NGOs/ CBOs
Non Medical Staff	Suppliers	The Society
Interest Groups (WHO)	Analysts	Insurance Industry
Private HealthCare & Clinics	Media	Women & Children
Medical Students	Medical Staff	Pre-Medical Students
Med. College/Hospital Administration	Regulatory Bodies	Elected Representatives

Stakeholders are persons, groups or institutions with interests in a project or programme. Primary stakeholders are those ultimately affected, either positively (beneficiaries) or negatively. Secondary stakeholders are the intermediaries in the aid to delivery process. Key stakeholders are those who can significantly influence, or are important to the success of the project.

The major stakeholder identification and key stakeholder interests are given below:

Stakeholder	Stakeholder Type	Key Interests
Citizens/Patients/Community	Primary	• Should be informed about services available, schemes etc in the department. • Beneficiary criteria for availing a particular scheme. • Safekeeping of PMI number/smart cards/ID cards • Participate in defining the policies through interaction with the departments using available feedback mechanisms. • Participate in health training programmes frequently.

Stakeholder	Stakeholder Type	Key Interests
		• Help Identify their needs and expectations from health department. • Participate in health screening programs for identifying communicable diseases etc. • Make choices where they want to be treated based on standard of services they avail from health care institutions. • Use the grievance redressal mechanism to bring to notice the loop-holes or downfall in the system.
Government Elected Reps/Senior Officers/Policy makers	Primary	• Inform Citizens about available benefits, procedure and policies • Liaise with other government ministries whose services link with the department. • Liaise with other levels of government that provide funding for healthcare and child care programs • Review community plans and schemes. • Involve citizens in policy making activities. • Develop planning frameworks and guidelines. • Provide leadership.
Employees	Secondary	• Reduce the workload of the employees, who need to perform the same task repeatedly

Stakeholder	Stakeholder Type	Key Interests
		• Better MIS systems for improving the internal efficiency of the department.
Business	Primary	• Single and integrated view of the business relationship across all departments and services. Business expects the government departments to take a consolidated view of their transactions across all departments. Business should no longer be required to provide the same information repeatedly and follow up transactions across departments • Simplified decision cycles. Businesses require the e-governance services to be supported by simplified decision cycles to facilitate faster turnaround times • Electronic exchange of information with other governmental organizations. Business requires the government to integrate electronically with other governmental organizations. This would help minimize the time required for compiling, endorsing and validating official documents collected from various other governmental organizations.(e.g.- as in the case of medical insurance)

3. As-Is Scenario Department-DoHFW

A comprehensive As-Is Assessment was done to understand the functioning of the Department, operational and organizational hierarchy, roles & responsibilities, services provided, Issues Faced, Priority Areas, IT Infrastructure availability etc. The As-Is Assessment matrix was prepared by conducting Personal Interviews with Department officials from all the Divisions. Secondary research from Annual Reports, publications, websites etc about Health care etc was also collected. Based on the interviews conducted the following As-Is Assessment Matrix has been prepared based on the Department's performance based on certain parameters.

Information

- Information flow within the Department
- Availability of real time, relevant and reliable information to the senior management to enable informed decision making
- Complete visibility across all levels

Technology

- Use of ICT to improve service delivery standards within the Department
- Provide network connectivity to all field offices of the Department
- Maintenance of online Beneficiary databases to eliminate data redundancy
- Generation of real time MIS reports to highlight areas of concern

Processes

- Ensure citizen facing processes are made simple and customer friendly
- Reduce Turn Around time for each transaction
- Reduce the number of touch points for each transaction
- Complete traceability across the entire process cycle
- Whether there are built in mechanisms within the processes to discourage corruption.

Staffing & Skills

- Whether the staff of the Department has the required number of staff for fulfilling its responsibilities
- Whether the Department personnel has the required training and skill sets in utilizing ICT tools

Other Resources

- Proposals/Plans to implement e-Governance initiatives to improve overall efficiency of the Department
- Whether there are adequate sources of funds to carry out e-Governance initiatives
- Availability of Project and Program Management expertise to implement these projects

Dimension	Current Scenario
§ Information	§ Information is currently collected manually from each level through paper formats, collated centrally and MIS reports are prepared for conducting reviews § Real time visibility across multiple levels is not available § Decision making is based on historical data and relies on the experience of the senior management § In case of epidemics no defined guidelines for data sharing.
§ Technology	§ Very few desktops are available at the hospitals/offices § No connectivity between Hospitals /PHCs or with district offices in the Department
§ Processes	§ Citizen facing processes such as registration for check-ups, referrals, getting information etc. need to be made citizen friendly § There is lack of advanced medical care in rural areas.
§ Staffing & Skills	§ The Department is inadequately staffed with personnel. There is a serious crunch of qualified medical staff in hospitals and more

Dimension	Current Scenario
	so in rural areas. § The Department may require some personnel with IT skill sets.

3.1 As-Is Assessment Matrix

Criteria used for Rating: The Department was rated as High, Medium or Low based on the following parameters:

- § Level of Process Optimization achieved for key services
- § Availability and Utilization of ICT in Department processes
- § Capacity Building requirements for e-Governance implementation and sustenance

High- Indicates that the department is advanced in terms of e-Governance initiatives

Medium-Indicates the department has the potential to achieve e-Governance objectives through process re-engineering and Implementation of ICT tools.

Low- Indicates that the department needs to take immediate action to achieve e-Governance initiatives.

Parameter	Performance Indicator	Rating	Remarks
IT Infrastructure	Availability, Utilization & Maintenance of Software, Hardware, Network Connectivity etc.	Low	During our visit to state, district headquarter & sub district level offices we observed that IT Infrastructure is restricted to a few desktops. Due to lack of proper maintenance some desktops are not functional at sub district level. No customized software applications are currently utilized for operational activities at district hospitals for analysis. Office applications are used for routine administrative functions such as typing official

			communications, reports etc. No email facility is provided to employees at state, district and sub district level. Lack of connectivity among institutions. No back up of the data monthly or weekly from blocks and districts. Upgraded virus software's not installed on desktops.
Real Time Data/ Information availability	Ease with which information can be accessed	Low	Majority of the information is currently maintained in paper files and retrieval of information is cumbersome at state medical hospital, district headquarters and sub district level.
Registration of Patients	Integrity of Records and Lack of data duplication	Low	Patient is registered twice in the hospital, once at registration and then in the concerned department. This increases the task of collating information regarding an individual patient and thereby losing the integrity in patient's record. No process for file tracking and storing.
Tracking of Patient records	Ease of storage and retrieval	Low	Records are maintained on paper in most of state and district hospitals. In some cases like NRHM Office applications are employed which needs to be integrated across all NRHM offices. Duplication of records across departments at state and district hospitals. Information regarding an individual can be retrieved only after collating information from all department registers.
Statistics regarding Health Status in the state/achievements of schemes in state	PHC and CHC level Achievements report	Medium	Statistical Information is collated manually and periodic reports are created using MS-Word and Excel and no analysis is done. Although there is application but people are

			not adequately trained to use the application at district headquarters. Training should be imparted to people in PHCs and CHCs.
Medical Care	State Infant Mortality rate etc.	Medium	Medical care in rural reaches of the state is not specialized. Patients have to travel a lot to avail quality care
Clinical consultation and Appointments	Turn Around Time for Citizens	Low	Currently consultation with doctors can be done only through a personal visit to their office/department in Hospital
Information Dissemination	Access points to citizens.	Medium	Departmental portal not updated regularly.
Hospital Management		Low	Lack of a common Hospital management system. SCB Cuttack Medical College Hospital is having a system which is not used fully like OPD process is automated and IPD process is manual.
Human Resource Management		Low	Betan application is being used for payroll processing but it is not being used across all the departments.
Audit		Low	No audits done by supervisory officers of district level during there visits to sub-centers, PHCs, CHCs to look into records.

4. As-Is Assessment Functions/ Services Under NRHM

4.1 Integrated Disease Surveillance Project

IDSP (Integrated Disease Surveillance Project) was launched in Nov 2004 by union minister of Health and Family Welfare. It is a decentralized, State based Surveillance Program in the country. It is intended to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner.

Key Objectives:

(1) Integrating and decentralization of surveillance activities.

(2) Strengthening of Public Health Laboratories.

(3) Human Resource Development – Training of State Surveillance Officers, District Surveillance Officers, Rapid Response Team, other medical and paramedical staff.

(4) Use of Information Technology for collection, collation, compilation, analysis and dissemination of data.

Current Status:

Currently under IDSP data is collected on weekly basis. The information is collected on three specified reporting formats, provided by Government of India, namely "P" (presumptive cases), "S" (suspected cases) and "L" (Laboratory confirmed cases) filled by Health Workers, Clinician and Clinical Laboratory for various communicable diseases and dog bites and snake bites. Weekly data gives time trends. Whenever

there is a rising trend of illnesses in any area, it is investigated by the Medical Officers/Rapid Response Teams (RRT) to diagnose and control the outbreak. Different reporting forms are there for weekly reporting under IDSP. Forms S, P, LI. L2 and L3 are reported form Sub- Centres, PHCs/CHCs to District Surveillance Unit (DSU). The reports received by DSUs are then send to State Surveillance Units (SSU). The SSU again send the report to Central Surveillance Unit (CSU).

IDSP Software is being developed by NIC. It is web based software with connectivity all over India. IDSP software is already being used at district level but software is not being used at block level due to connectivity issues. All the data from Sub District level comes to district level in the form of reports which are filled manually at Sub District level. At district level there is DSU (District Surveillance Unit) which consists of Data Manager and Data Entry Operator which enters the data in the IDSP software online.

Key Observations:

a) People are not adequately trained at district level to use the software.
b) There is no connectivity at block level. Data is entered manually at block level in the formats (P, S, and L).
c) Complete software is yet to be developed by NIC for various reports and graphs.
d) Software is not up to the mark.
e) The P, S and L forms are being routinely submitted. However, issues with data validation and feedback for prompt action still remain to be addressed at various levels. The State and district labs still need further strengthening.
f) The State and district level IDSP is being strengthened, with appointment of data entry operators, data managers and district surveillance officers in place. However, the Rapid Response Team needs to be further strengthened for outbreak investigation & further action.

4.2 Hospital Management Information System (HMIS)

HMIS has been envisaged to facilitate better planning, monitoring and control of medical and health services at all levels (block, district, division & state) for the administrators and government officials using decision support indicators and to assist the doctors and medical staff to improve health services with readily reference patient data, work flow enabled less-paper process and parameterized alarms and triggers during patient treatment cycle. HMIS is state-of the-art healthcare solution to provide better care to patients by addressing all the major functional areas of the hospital & the entire gamut of hospital activities. The Health Statistics Information Portal facilitates the flow of physical and financial performance from the District level to the State HQ and the Centre using a web based Health Management Information System (HMIS) interface. The portal will provide periodic reports on the status of the health sector.

Objectives:

- Have integrated state-level holistic view of the resource utilization including skilled manpower, high-tech equipments and facilities.
- Monitoring of identified indicators and comparison of efficiency and performance among hospitals, services by doctors, financial data and staff.
- Minimize chances of human error/carelessness/absence/forget fullness.
- Creation of electronic medical records and integration of same at state level.
- Focus on hospital management through increased efficiency in delivery of health care services in following manner:
    a) Improved asset utilization including laboratory and medical equipments
    b) Replacement of non clinical manual work like preparing indents, reports.

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- Online review & monitoring tool which provides comparative data for reviewing individual & comparative performance of the hospitals.

- Improved clinical & diagnostic services through workflow driven processes to cut down on manual transmission of data - cutting on time delays and human errors and ensure data integrity.
- Early alerts on disease trends/cause of deaths on International codes.
- Management tool for comprehensive drug management.
- Provide planning & policy tools for cost analysis, etc.
- Provide management tools for day to day clinical and surgery activities.
- Provide financial tool for billing, accounting and budgeting.

Current Status:

Current HIMS system is developed by GoI from New Delhi.

NHSRC as nodal technical support agency for the NRHM and the Ministry of Health, Government of India, NHSRC is engaged in providing different forms of technical assistance on HMIS. NHSRC will provide inputs on the technical redesign of the HMIS with a view to supporting the NRHM agenda of creating architectural corrections in health systems. As a part of this NHSRC will Design, develop and customize free and open source software to meet the needs of Orissa state with respect to the redesigned HMIS.

Comprehensive HMIS reporting formats have been introduced in the State since April, 2007 by integrating CNAA, RIMS, NRHM and the vertical National Program reporting.

Key Observations:

a) Computers are in place at district & block levels. Although HMIS formats are in place and data collection, compilation and entry are taking place at various levels there are serious issues with data quality. Filling up of the 4 NRHM forms by ANMs was found to be inconsistent and incomplete. Therefore strengthening of ANM skills is necessary.

b) Analysis of the HMIS data is done first only at district level. Data validation needs to be strengthened- there are issues of both over reporting and under-reporting.

c) Feedback to PHCs & Sub centers for action needs to be strengthened too. About 30 registers (mostly locally purchased and handwritten, not printed) are maintained by ANMs which is a huge burden on them. The number should be reduced, and whatever registers are found necessary must be printed and supplied.

d) Data Analysis is not being done at block and state level. People are not fully trained at block and district level to use application.

e) People are not very keen to use application at block level.

Key Challenges:

a) Data Quality Analysis
b) Managing increased user base
c) Scheduled compilation of reports
d) Data Quality Analysis
e) Training Sub District level users
f) Requirement from state governments is needed in timely uploading of data by all districts and generating preliminary reports.
g) Using IT infrastructure of NIC, IDSP and CSCs.

Current Information Flow for Web Based HMIS for Orissa State

IMR (Infant Mortality rate) and MMR (Maternal Mortality Rate) data in the form of formats from blocks, PHCs and CHCs is collected manually and given to District Headquarters. District Program Manager will enter the data in DHIS 2 application after calculation of IMR and MMR rate and it is sent state headquarters.

4.3 Telemedicine

Tele medicine is linked to a specialist centre through traditional phone lines, satellite and broadband connectivity. That supports the real-time /store and forward raw and interpreted vital signs, Electronic medical record and Medical images. All patient data is centrally stored and retrieved from a database server, promises numerous benefits ranging from shorter waiting times, Convenience of the patient, may be cheaper than conventional practice in certain cases, allows the possibility of changing the mix of skills at the periphery, enhances communication between the peripheral and tertiary level hospitals making the data available at any time and Reach out to the rural mass in need of expert opinion on their health conditions Specialists from various streams of medicine identified. Saving of time and cost for the patients.

Current Status:

Telemedicine is currently connected to 6 District Headquarter Hospitals and 3 Medical Colleges through VitalWare telemedicine software in Orissa state.

VitalWare is a telemedicine software engine of TeleVital that supports the real-time/ store and forward raw and interpreted vital signs, medical images. All patient data is centrally stored and retrieved from a secure database server, making the data available at any time. VitalWare operates using a standard web-browser allowing for transmission and receipt of medical data over hybrid IP networks.

VitalWare version 2 is being used by 6 DHH and 3 Medical Colleges. Presently ISRO network is being used for 6 DHH and 3 Medical Colleges.

III Phase of Telemedicine project aims to cover 22 District Headquarter Hospitals for telemedicine. Talks are going on with C-DAC Pune for project Implementation. C-DAC is supposed to establish this network on MPLS-VPN as ISRO cannot support bandwidth till 3rd Quarter of 2010.

Telemedicine project aims to cover all the major hospitals of the state and ultimately enable all the PHC's to avail the telemedicine facility. Doctors at the PHC's will refer complicated cases to the specialists in major cities who in turn will give their advice within the specified time frame. It will be an endeavor to reach out to the rural mass in need of expert opinion on their health conditions. Specialists from various streams of medicine (psychiatry, internal medicine, rehabilitation, cardiology, pediatrics,

obstetrics and gynecology, dermatology, nephrology, neurology, and gastroenterology etc.) have to be identified for the purpose of providing consulting as and when required. The proposed system will also make use of tele radiology which will involve sending radiographic images (x-rays) from one location to another. It will use, both real-time based (synchronous) and store-and-forward (asynchronous) technologies.

Key Challenges:

a) All hospitals are lacking bandwidth and switching capacity.
b) Resistance to incorporation of tele health technologies.
c) Legal issues with respect to data protection, product liabilities and standards, personal responsibility, cross border transmission, confidentiality needs to be well addressed.

4.4 RNTCP

RNTCP or the Revised National Tuberculosis Control Program is the State-run Tuberculosis Control Initiative of the Government of India. It incorporates the principles of directly observed treatment-Short course (DOTS) - the global TB control strategy of the World Health Organization. The program provides, free of cost, quality Anti-Tubercular drugs across the country through the numerous Primary Health Centers and the growing numbers of the private-sector DOTS-providers. The Revised National TB Control Programme aims to widen the scope for providing standardized, good quality treatment and diagnostic services to all TB patients in a patient-friendly environment, in which ever health care facility they seek treatment from.

Current Status:

Currently software named EPI Center is running in district head quarter hospital for monitoring & evaluation for the program. Previously window based software was there but presently a new version of web based application is being used.

This application is developed by GOI. This is web based software with connectivity all over India. Its is being used in district level but not at sub district level coz of connectivity issue. All the data from Sub District level comes to district level in the form of reports which are filled manually by STS (Senior Treatment Supervisor). At district level there is RNTCP center which consists of DTO (District Tuberculosis Officer) and ADEO (Accountant Data Entry Operator) which enters the data in the software online.

Key Observations:

a) People are adequately trained at district level to use the software.
b) There is no connectivity at block level.

4.5 NVBDCP (National Vector Borne Disease Control Program)

NVBDCP is the nodal agency for the prevention & control of vector born disease like malaria, dengue etc. In Orissa NVBDCP deals with
Malaria
Dengue
Filariasis
Kala-azar

Malaria:
Currently in district Malaria is controlled through EDPT (Early case detection & prompt treatment) strategy & several vector programs are running in block level to minimize the risk of malaria like

Chemical Control
Biological Control
Community participation
Environmental Management & source reduction method

Current Status:
Currently software named NAMMIS is running in district head quarter hospital for monitoring & evaluation for the program.
This application is developed by TCS. This is a web based software & connectivity all over India. Its is used at district level and not at block level because of connectivity issue. All the data from sub district level comes to district level in the form of reports which are filled manually at sub district level. At district level there is DPMU (District Program Management Unit) which consists of Data Manager and Data Entry Operator which enters the data in the NAMMIS software online.

Key Observations:
a) People are not adequately trained at district level to use the software.
b) There is no connectivity at block level and data is entered manually in the reports provided by GOI.

4.6 NLEP (National Leprosy Elimination Programme)

The National Leprosy Control Programme was launched in the year 1954-55. After the avail- ability of more effective combination of Anti Leprosy Drugs, the programme was redesignated as National Leprosy Eradication Programme in 1981-82. The prevalence

rate of 62.4 /10,000 in 1981 was reduced to 3.1 /10,000 in 2001 due to the multi drug therapy (MDT) The World Bank supported this activity as a Project from 1993.

Key Objectives:

a. To achieve elimination stage in the State by 2004.
b. To integrate NLEP with general health care services.
c. To sustain the achievements gained

Key Initiatives:

In order to detect the hidden cases of leprosy, a campaign is organized in a specific date in every month in the district level. The campaign has following objectives.

a. To create awareness about leprosy and seek community involvement
b. To orient the staff working at the Voluntary Reporting Centers (VRC)
c. To examine the suspected cases and treat finally diagnosed.
d. E. C. activities are carries out by using electronic and print media

Current Status:

A separate cell of NLEP is running in district hospital headed by CDMO. Though an application is designed & developed by Govt.of India for reporting & monitoring purpose of the said programme but the district are currently using excel sheet for monthly reporting to directorate at state level by DNMS (District Nucleus Male Supervisor) after collecting data from sub-district level manually.

4.7 Programme Management Structure (District and State Level)

The State PMU has strong leadership and very good working ethos. District PMUs are active, professional and vibrant. Good team work and integration with district and block medical teams exists in the state. PMU are burdened with routine repetitive work and this has resulted in less time for critical analysis and reflection for program quality improvement. Some programme retreats are required for them together with the medical/technical officers' team in the district.

The State PMU has strong leadership and very good working ethos. District PMUs are active, professional and vibrant. Good team work and integration with district and block medical teams exists in the state. PMU are burdened with routine repetitive work and this has resulted in less time for critical analysis and reflection for program quality improvement. Some programme retreats are required for them together with the medical/technical officers' team in the district.

The professionalization of health systems management in NRHM in Orissa has been a major factor in enabling the process of paradigm shift and effective decentralization in the state. A suggestion which emerged was the need for State and District Health Resource Centers, to provide technical and professional support for health system reforms, facilitating decentralized planning, coordinating training and capacity development across different national programmes/themes and improving the training quality, behavior change communication and monitoring with quality assessment. (The nutrition component of health would also be included in the above). This will also help in linking the new cadre of social sector management professionals – DPMs, BPOs to a resource network and institutions of excellence.

4.8 FMIS (Financial Management Information System)

Current Status:

As a part of the Financial Management Guidelines under NRHM, to streamline the Programme Management process and fund flow, a common file routing procedure has been developed for all programmes like RCH-II, NRHM Initiatives, Immunisation & all Disease Control Programmes being implemented under NRHM. This guideline is expected to integrate both programme & financial management process and improve functional efficiency at all levels.

After PIP (Project Implementation Plan) approval district fund is transferred from the state electronically to the respective programme account opened at ZSS under NRHM. The copy of the fund transfer along with the distribution statement and financial guideline for spending the same is communicated to the CDMO & copy is marked to the DPMU for information. CDMO after verifying the same marks the letter to the respective Programme Officer to take necessary steps for carrying out the activities. The Dealing Assistant of the respective programme initiates the file and put up the file to the District Accounts Manager (DAM). DAM confirms the availability of fund and verifies the budgetary approval in the PIP and put the file to DPM for preparing necessary plan of action for release of fund whenever required. DPM in consultation with the Programme Officer prepares the plan of action (Micro plan) &spending plan and puts the file to the Programme Officer for approval. Programme Officer after due verification of the same submits the file to CDMO for concurrence. If the funds to be released are within the administrative power of the CDMO, CDMO approves the same or else the file is submitted to Collector for approval. After the cheque is signed, it is the responsibility of the DAM to ensure that funds are released/transferred electronically to the respective block/ agencies and confirm the receipt of the same. Dealing Assistant of the concerned programme is custodian of all the files, books of accounts and other records.

Key Observations:

a) There is no broad based database and query based software.
b) Reports are filled manually and are not based on book of accounts.
c) There is duplicacy of work. Same expenditure is complied at block, district and state level).
d) Accounting system not in place.
e) Tally, though used but customized tally should be used up to block level.
f) Lack of understanding of double entry system at block level.
g) Concurrent audit is not taking place at all districts.
h) Lack of monitoring against approved activities in the PIP.

Key Challenges:

a) Concurrent audit system should be implemented upto block level for better financial management. Action taken report should be prepared and sent to state and a summary report to center on regular basis.
b) Capacity building should be done at district level for block accountants/clerks.
c) Feeding of data on HMIS portal.

4.9 FMS (File Management System)

Most of the processes are manual and paper-based; hence the file movement results in delay, taking lot of time for the service delivery. This was noticed during As-Is study of most of processes.

5 As-Is Assessment: Hardware and Applications

IT Infrastructure was captured during the study to understand the present level of IT preparedness of the department. The information thus captured will help to identify the level of automation and subsequently mapping the hardware and software requirement for rolling out the services under Department of Health and Family Welfare.

Details of present level of hardware and software application is given below-

5.1 Hardware Details

Numbers /Offices	District Hospital Khurda	SCB Medical College Cuttack	District Hospital Bergarh	Shergada Block Institution Ganjam	Udala Block Mayurbhanj
Database Server	0	1	1	0	0
Desktop PC	2	40	2	2	2
Laser Printers	2	40	2	2	2
Touch Screen Kiosks	0	0		0	0
Scanners	2	5	1	1	1
UPS 5 KVA	2	2	2	2	2
UPS 2 KVA					

5.2 Existing IT Applications

The following software applications are available in DoHFW and its associated functions.

1. DHIS2
2. E-Procurement
3. HRMS (Human Resource Management Software)
4. OPD Registration
5. OSWA (Orissa State Workflow Automation)
6. E-Municipality
7. Smart Panchayat
8. E-Pragati
9. Betan
10. E-Dispatch
11. E-Diary
12. BAMS (Bio Metric Attendance Monitoring System)
13. HRMIS (Human Resource Management Information System)
14. GIS (Geographic Information System)
15. SMS System
16. RIMS (Routine Immunization Management System)
17. Telemedicine
18. IDSP (Integrated Disease Surveillance Project)
19. NAMMIS (National Anti Malaria Management Information System)
20. DIMS (Drug Inventory Management System)
21. Vaccine Logistic Management Software
22. EPI-Center
23. Doctor-Glance (HRMS)

The following table outlines the salient feature of the software applications available in DoHFW.

Table 5.2.1

(District Health Information System) (DHIS)

Sl. No.	Attributes	Particulars
General Particulars		
1.	Name of IT Application	DHIS 2
2.	Services Offered by the Application	Monitoring of physical and financial data entered from district hospital
3.	Application Owner	DoHFW GoI & NHSRC (Delhi)
4.	Application User (Officer / Designation)	DHIO (District Health Information Officer), BPO (Block Program Officer) SDO (State Data Officer)
5.	Date of Implementation	August- 2008
6.	Stage of Roll out - Pilot or Fully Rolled out	Partially Rolled out
7.	Application Development Agency	NHSRC
Application Particulars		
8.	System Architecture	N Tier
9.	Operating System	MS – Windows
10.	Technology used in the application	My SQL
11.	Customization done as per the department requirements - Yes/No	Yes
12.	Whether it can be Customized	Yes
13.	Availability of Source code - Yes/ No	No
14.	With Whom the Source Code is Available	NHSRC
15.	Data Storage Done at	NHSRC Delhi
16.	Application Connectivity through LAN - Yes/No	Yes

Sl. No.	Attributes	Particulars
17.	Offices/ Officials linked with the Application	DoHFW
18.	Volume of Transactions per Month	> 1000
19.	Remarks - any additional development, testing required	No Remarks
20.	User Requirements - Feed back from the User	a) Application not user friendly. b) Server functioning not proper c) Data has to be exported to GoI

Table 5.2.2

E-procurement

Sl. No.	Attributes	Particulars
General Particulars		
1.	Name of IT Application	GeP-NIC
2.	Services Offered by the Application	Online Tendering of various government Departments
3.	Application Owner	NIC
4.	Application User (Officer / Designation)	Users of Govt. of Orissa,
5.	Date of Implementation	March 2008
6.	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out.
7.	Application Development Agency	NIC
Application Particulars		
8.	System Architecture	n-Tier
9.	Operating System	Redhat Linux
10.	Technology used in the application	Open Source Technology. Postgre SQL as the Database

Sl. No.	Attributes	Particulars
		and J2EE as the front-end
11.	Customization done as per the department requirements - Yes/No	Yes
12.	Whether it can be Customized	Yes
13.	Availability of Source code - Yes/ No	Yes
14.	With Whom the Source Code is Available	NIC
15.	Data Storage Done at	NIC Bhubaneswar Data Center
16.	Application Connectivity through LAN - Yes/No	Yes
17.	Offices/ Officials linked with the Application	Various Government Departments namely Water Resources, Rural Development, Housing & Urban Development, Public Works.
18.	Volume of Transactions per Month	7000 Tenders processed per annum
19.	Remarks - any additional development, testing required	Technical Evaluation module and Payment Gateway module is under development.
20.	User Requirements - Feed back from the User	Payment Gateway module is required.

Table5.2.3

Human Resource Management Software (HRMS)

Sl. No.	Attributes	Particulars
General Particulars		
1.	Name of IT Application	HRMS
2.	Services Offered by the Application	Budgeting , Fund utilization and monitoring of various schemes under NRHM.

Sl. No.	Attributes	Particulars
3.	Application Owner	NRHM Directorate.
4.	Application User (Officer / Designation)	NRHM Directorate officials, District and Block Level officials of NRHM
5.	Date of Implementation	2008
6.	Stage of Roll out - Pilot or Fully Rolled out	Roll-out Completed.
7.	Application Development Agency	NIC
Application Particulars		
8.	System Architecture	n-Tier
9.	Operating System	Windows 2003 Server
10.	Technology used in the application	Microsoft Dot Net & SQL Server 2005
11.	Customization done as per the department requirements - Yes/No	Yes
12.	Whether it can be Customized	Yes
13.	Availability of Source code - Yes/ No	Yes
14.	With Whom the Source Code is Available	NIC
15.	Data Storage Done at	NIC Data Center
16.	Application Connectivity through LAN - Yes/No	Yes
17.	Offices/ Officials linked with the Application	NRHM Directorate, District and block Level offices of NRHM
18.	Volume of Transactions per Month	Not Available
19.	Remarks - any additional development, testing required	No Remarks
20.	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.4

OPD Registration

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	OPD Registration
2	Services Offered by the Application	Tickets for Outdoor, Outdoor patient Registration, generating Medical Reports.
3	Application Owner	Cuttack SCB Medical College & Hospital
4	Application User (Officer / Designation)	Staffs in all the OPD departments.
5	Date of Implementation	2005
6	Stage of Roll out - Pilot or Fully Rolled out	Rolled out in Cuttack SCB Medical College & Hospital
7	Application Development Agency	Kalinga-Soft
Application Particulars		
8	System Architecture	Two- Tier
9	Operating System	Windows XP
10	Technology used in the application	Oracle 10g Standard Database as RDBMS, Java as the front-end and Apache Tomcat as Web server has been used.
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	Cuttack SCB Medical College & Hospital
15	Data Storage Done at	Cuttack SCB Medical College & Hospital

Sl. No.	Attributes	Particulars
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	All the OPD clinics of Cuttack SCB medical College & Hospital
18	Volume of Transactions per Month	N.A.
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.5

Orissa State Workflow Automation (OSWS)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Orissa State Workflow Automation (OSWS)
2	Services Offered by the Application	a) Court Case Management System. b) Expenditure Management And Tracking system. c) RTI d) Assembly Question Process for Introduction of Bills or Amendments In Assembly. e) Application for Management Of CCR/ACR of Different Categories of Officers. f) Application for Cabinet Memorandum

Sl. No.	Attributes	Particulars
		g) Monitoring of Govt. Of India Issues.
3	Application Owner	Orissa Computer Application Center (OCAC)
4	Application User (Officer / Designation)	Various Government Officers in the Secretariat.
5	Date of Implementation	Under Implementation
6	Stage of Roll out - Pilot or Fully Rolled out	Roll Out is going on.
7	Application Development Agency	Tata Consultancy Services (TCS)
Application Particulars		
8	System Architecture	n-Tier
9	Operating System	Redhat Linux
10	Technology used in the application	J2EE front-end and Oracle 10g Database and application server
11	Customization done as per the department requirements - Yes/No	Going on.
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Source Code Will be Available once development is completed.
14	With Whom the Source Code is Available	OCAC
15	Data Storage Done at	State Secretariat and will be shifted to SDC once SDC will be fully operational.
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	All the Departments of Government of Orissa
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development,	No Remarks

Sl. No.	Attributes	Particulars
	testing required	
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.6

E-Municipality

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	e- Municipality.
2	Services Offered by the Application	Birth Registration in Municipality area. Death Registration in Municipality area
3	Application Owner	OCAC, Govt. Of Orissa
4	Application User (Officer / Designation)	Municipality Officials.
5	Date of Implementation	Under Implementation
6	Stage of Roll out - Pilot or Fully Rolled out	Roll Out in Forty Four Municipalities.
7	Application Development Agency	Tata Consultancy Services (TCS)
Application Particulars		
8	System Architecture	n-Tier
9	Operating System	Sun Solaris
10	Technology used in the application	J2EE front-end and Oracle 10g Database and JBOSS application server
11	Customization done as per the department requirements - Yes/No	Going on.
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Source Code Will be Available once development is completed.

Sl. No.	Attributes	Particulars
14	With Whom the Source Code is Available	OCAC
15	Data Storage Done at	OCAC
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	All the departmental offices of Forty four Municipality.
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.7

Smart Panchayat

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Smart Panchayat.
2	Services Offered by the Application	a) Birth Registration in Panchayat &Villages. b) Death Registration in Panchayat & Villages. c) Disease outbreak alarming system. d)Health Camp Schedule Immunization alert.
3	Application Owner	OCAC, Govt. Of Orissa
4	Application User (Officer / Designation)	Panchayat and Village level bodies officials, Block level officials
5	Date of Implementation	Under Implementation

Sl. No.	Attributes	Particulars
6	Stage of Roll out - Pilot or Fully Rolled out	Pilot is being implemented in total thirty two Panchayat under two blocks (Cuttack Sadar & Baripada).
7	Application Development Agency	CSM Technologies
Application Particulars		
8	System Architecture	n-Tier
9	Operating System	Windows 2003 Server
10	Technology used in the application	Microsoft Dot Net & SQL Server 2005
11	Customization done as per the department requirements - Yes/No	Going on.
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Source Code Will be Available once Development is completed.
14	With Whom the Source Code is Available	OCAC
15	Data Storage Done at	OCAC
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	The Panchayat bodies at the Pilot Location
18	Volume of Transactions per Month	Not Available.
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.8

E-Pragati

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	E-Pragati.
2	Services Offered by the Application	Tracking of Pregnant Mother Tracking of Nursing Mother. Tracking of Child.
3	Application Owner	Department of Women and Child Welfare Govt. Of Orissa
4	Application User (Officer / Designation)	Officials of Department of Women and Child Welfare Govt. Of Orissa
5	Date of Implementation	2007
6	Stage of Roll out - Pilot or Fully Rolled out	Roll Out Completed.
7	Application Development Agency	CSM Technologies
Application Particulars		
8	System Architecture	n-Tier
9	Operating System	Windows 2003 Server
10	Technology used in the application	Microsoft Dot Net & SQL Server 2005
11	Customization done as per the department requirements - Yes/No	Yes.
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	OCAC
15	Data Storage Done at	Department of Women and Child Welfare Govt. Of Orissa
16	Application Connectivity through LAN - Yes/No	Yes

Sl. No.	Attributes	Particulars
17	Offices/ Officials linked with the Application	The Panchayat bodies at the pilot location.
18	Volume of Transactions per Month	Not Available.
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.9

Betan

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Betan
2	Services Offered by the Application	Payroll Processing of the Employees
3	Application Owner	OCAC
4	Application User (Officer / Designation)	Various Govt. Department of Orissa
5	Date of Implementation	2005
6	Stage of Roll out - Pilot or Fully Rolled out	Roll-out
7	Application Development Agency	NIC
Application Particulars		
8	System Architecture	n-Tier
9	Operating System	Windows 2003 Server
10	Technology used in the application	Oracle 10g Database as RDBMS and Oracle Application Server.
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes

Sl. No.	Attributes	Particulars
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	NIC
15	Data Storage Done at	NIC Data Center.
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	All the Government offices of Government of Orissa.
18	Volume of Transactions per Month	Not Available.
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.10

E-Dispatch

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	E-Dispatch
2	Services Offered by the Application	Dispatching of letters electronically and sharing letters with public and private.
3	Application Owner	NRHM
4	Application User (Officer / Designation)	NRHM (Mission Directorate)
5	Date of Implementation	October-2008
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out
7	Application Development Agency	CSM Technologies
Application Particulars		

Sl. No.	Attributes	Particulars
8	System Architecture	Two Tier
9	Operating System	MS – Windows
10	Technology used in the application	ASP.Net & SQL Server-2005
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	No
15	Data Storage Done at	NRHM Website (NIC Server)
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	NRHM State Office
18	Volume of Transactions per Month	> 1000
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.11

E-Dairy

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	E-Dairy
2	Services Offered by the Application	Tracking movement of incoming letters
3	Application Owner	NRHM

Sl. No.	Attributes	Particulars
4	Application User (Officer / Designation)	NRHM
5	Date of Implementation	Jan 2009
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out
7	Application Development Agency	In-house Development
Application Particulars		
8	System Architecture	N Tier
9	Operating System	MS – Windows
10	Technology used in the application	ASP.Net & SQL Server
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	NRHM
15	Data Storage Done at	NRHM
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	NRHM
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.12

Biometric Attendance Monitoring System (BAMS)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Biometric Attendance Monitoring System (BAMS)
2	Services Offered by the Application	Attendance tracking for NRHM till state level (Rolled Out to District Level)
3	Application Owner	NRHM
4	Application User (Officer / Designation)	NRHM
5	Date of Implementation	June-2009
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out at state office
7	Application Development Agency	Add Soft Technologies
Application Particulars		
8	System Architecture	N Tier
9	Operating System	MS – Windows
10	Technology used in the application	ASP.Net & My SQL
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	N.A
15	Data Storage Done at	NRHM
16	Application Connectivity through LAN -	Yes

Sl. No.	Attributes	Particulars
	Yes/No	
17	Offices/ Officials linked with the Application	NRHM
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.13

Human Resource Management Information System (HRMIS)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Human Resource Management Information System (HRMIS)
2	Services Offered by the Application	Capturing the employee details with performance appraisal and leave management and employee GIS.
3	Application Owner	NRHM
4	Application User (Officer / Designation)	NRHM (Mission Directorate)
5	Date of Implementation	Sep-2009
6	Stage of Roll out - Pilot or Fully Rolled out	Partially Rolled out
7	Application Development Agency	In-House and Luminous Info way
Application Particulars		
8	System Architecture	N Tier
9	Operating System	MS – Windows
10	Technology used in the application	ASP.Net & SQL Server

Sl. No.	Attributes	Particulars
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	NRHM
15	Data Storage Done at	NRHM State Office
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	NRHM Officials
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.14

Urban Health GIS

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Urban Health GIS
2	Services Offered by the Application	GIS based health institutions mapping and facility tracking.
3	Application Owner	NRHM
4	Application User (Officer / Designation)	NRHM Public
5	Date of Implementation	Feb-2009
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out
7	Application Development Agency	Luminous Info way

Sl. No.	Attributes	Particulars
Application Particulars		
8	System Architecture	N Tier
9	Operating System	MS – Windows
10	Technology used in the application	ASP.Net & SQL Server
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	Not Available
15	Data Storage Done at	NRHM
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	NRHM Offices
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.15

SMS System

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	SMS System
2	Services Offered by the Application	Group SMS sending
3	Application Owner	NRHM

S I. No.	Attributes	Particulars
4	Application User (Officer / Designation)	NRHM (Mission Directorate)
5	Date of Implementation	Oct 2008
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out
7	Application Development Agency	CSM Technologies
Application Particulars		
8	System Architecture	N Tier
9	Operating System	MS – Windows
10	Technology used in the application	ASP.Net
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	Not Available
15	Data Storage Done at	NRHM State Office
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	NRHM Officials
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.16

Routine Immunization Monitoring System (RIMS)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Routine Immunization Monitoring System (RIMS)
2	Services Offered by the Application	Immunization Monitoring
3	Application Owner	DoHFW, Govt. of India
4	Application User (Officer / Designation)	District and State Level Officials
5	Date of Implementation	Oct 2007
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out
7	Application Development Agency	DoHFW, Govt. of India
Application Particulars		
8	System Architecture	N Tier
9	Operating System	Windows 2003 Server
10	Technology used in the application	Microsoft Access Database and Microsoft VB Front-end
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	No
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	Not Available
15	Data Storage Done at	Dept Of H&FW, Govt. of India
16	Application Connectivity through LAN - Yes/No	Yes

Sl. No.	Attributes	Particulars
17	Offices/ Officials linked with the Application	District Hospitals and State directorate
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.17

Telemedicine

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Vital Ware (FMS)
2	Services Offered by the Application	Sharing of patient records with other hospitals and institutes.
3	Application Owner	Tele Vital
4	Application User (Officer / Designation)	Telemedicine
5	Date of Implementation	Oct 2008
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled out
7	Application Development Agency	Tele Vital Bangalore
Application Particulars		
8	System Architecture	N Tier
9	Operating System	MS – Windows
10	Technology used in the application	Web Based Application
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes

Sl. No.	Attributes	Particulars
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	Tele Vital Bangalore
15	Data Storage Done at	Telemedicine Center, SCB Medical
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	6 District Headquarter Hospitals
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.18

IDSP (Integrated Disease Surveillance Project)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	IDSP Software
2	Services Offered by the Application	Reporting of diseases
3	Application Owner	NIC
4	Application User (Officer / Designation)	IDSP Cell, DSU (District Surveillance Unit), Data Manager & Data Entry Operator)
5	Date of Implementation	Oct-2009
6	Stage of Roll out - Pilot or Fully Rolled out	Pilot
7	Application Development Agency	NIC
Application Particulars		

Sl. No.	Attributes	Particulars
8	System Architecture	N Tier
9	Operating System	MS – Windows
10	Technology used in the application	ASP.Net & SQL Server
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	NIC
15	Data Storage Done at	Gov of India, Delhi (CSD)
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	DoHFW
18	Volume of Transactions per Month	> 1000
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.19

NAMMIS

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	National Anti Malaria Management Information System
2	Services Offered by the Application	Data entry & reporting for EDPT, LPL,UMS,IEC,EXP etc.

S I. No.	Attributes	Particulars
3	Application Owner	Govt Of India
4	Application User (Officer / Designation)	Official of District Program Management Unit (DPMU)
5	Date of Implementation	Oct 2008
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled Out
7	Application Development Agency	TCS
Application Particulars		
8	System Architecture	Two Tier
9	Operating System	Windows XP in client and Windows 2003 In server
10	Technology used in the application	ASP.net
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	N.A
15	Data Storage Done at	N.A
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	No
18	Volume of Transactions per Month	>1000
19	Remarks - any additional development, testing required	N.A
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.20

Drug Inventory Management System (DIMS)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Drug Inventory Management System (DIMS)
2	Services Offered by the Application	Stock monitoring, Procurement of drugs, Medical Consumables, Beding and Clothing & Tendering process.
3	Application Owner	Gov of Orissa
4	Application User (Officer / Designation)	Analyst programmer of SDMU (Sate Drug Management Unit)
5	Date of Implementation	May-2001
6	Stage of Roll out - Pilot or Fully Rolled out	Fully Rolled Out
7	Application Development Agency	Broadline Computer System Chennai.
Application Particulars		
8	System Architecture	Two Tier
9	Operating System	Windows XP in client and Windows 2003 in server
10	Technology used in the application	MS VB & Oracle 8i
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	Yes
14	With Whom the Source Code is Available	Computer Section of SDMU Office
15	Data Storage Done at	SDMU Office, Bhubaneswar

Sl. No.	Attributes	Particulars
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	No
18	Volume of Transactions per Month	64000 (Approx) for Drugs only
19	Remarks - any additional development, testing required	Though the application is developed at the time of windows 98, so some of the modules of that application not supported to windows XP.
20	User Requirements - Feed back from the User	Making the application web-based.

Table 5.2.21

Vaccine Logistic Management Software (VLMS)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Vaccine Logistics Management Software
2	Services Offered by the Application	Vaccine logistic Management
3	Application Owner	UNICEF
4	Application User (Officer / Designation)	State & district level officials
5	Date of Implementation	Mar 2009
6	Stage of Roll out - Pilot or Fully Rolled out	Rolled out in Cuttack SCB Medical College Hospital
7	Application Development Agency	Anil Computers
Application Particulars		
8	System Architecture	Three- Tier

Sl. No.	Attributes	Particulars
9	Operating System	Windows 2003
10	Technology used in the application	Oracle 10g Standard Database as RDBMS, Visual Basic as the front-end.
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	Not Available
15	Data Storage Done at	Anil Computers
16	Application Connectivity through LAN - Yes/No	Yes
17	Offices/ Officials linked with the Application	District vaccine stores and state directorate
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No specific requirements

Table 5.2.22

EPI-Center

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	EPI-Centre
2	Services Offered by the Application	Data Entry & Report Generation of case Finding, result of treatment and program monitoring
3	Application Owner	Deputy Director (TB Cell) Govt of Orissa.
4	Application User (Officer / Designation)	Staffs of Deputy Director (TB Cell) Govt. of Orissa
5	Date of Implementation	2005
6	Stage of Roll out - Pilot or Fully Rolled out	Roll-out Completed.
7	Application Development Agency	Central TB Division, Govt. of India
Application Particulars		
8	System Architecture	Stand alone Desktop
9	Operating System	Windows XP
10	Technology used in the application	C++ based program.
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	No
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	Not Available
15	Data Storage Done at	Deputy Director (TB Cell) Govt. of Orissa
16	Application Connectivity through LAN - Yes/No	No

Sl. No.	Attributes	Particulars
17	Offices/ Officials linked with the Application	Deputy Director (TB Cell) Govt.of Orissa.
18	Volume of Transactions per Month	Not Available
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

Table 5.2.23

Doctor Glace (HRMS)

Sl. No.	Attributes	Particulars
General Particulars		
1	Name of IT Application	Doctor-Glance
2	Services Offered by the Application	§ Doctors Registration Details § Qualification § Name, DoB § Posting details
3	Application Owner	Directorate of Health Services
4	Application User (Officer / Designation)	State Directorate officials.
5	Date of Implementation	2009
6	Stage of Roll out - Pilot or Fully Rolled out	Rolled out in Directorate
7	Application Development Agency	NIC
Application Particulars		
8	System Architecture	Three- Tier

Sl. No.	Attributes	Particulars
9	Operating System	Windows 2003
10	Technology used in the application	Microsoft dot net as front-end and SQL Server 2005 as RDBMS.
11	Customization done as per the department requirements - Yes/No	Yes
12	Whether it can be Customized	Yes
13	Availability of Source code - Yes/ No	No
14	With Whom the Source Code is Available	Not Available
15	Data Storage Done at	Directorate of Health Services
16	Application Connectivity through LAN - Yes/No	No
17	Offices/ Officials linked with the Application	Office of the Directorate of Health Services.
18	Volume of Transactions per Month	N.A.
19	Remarks - any additional development, testing required	No Remarks
20	User Requirements - Feed back from the User	No Specific Requirements

6. Best Practices

A best practice is an innovative policy, strategy, program, process or practice that is shown to produce superior results. Documenting best practices can be useful in formulation of strategies to improve the performance through increased competitiveness. The study of best practices would allow department to consider how to adapt the experiences of other similar departments in planning, maintenance and implementation of the critical business processes with which the department is concerned.

HRMIS in GlaxoSmithKline Consumer HealthCare (GSKCH), India

Problem Statement

- Lack of automation in HR processes had resulted in bottlenecks within the HR system of GSKCH

- With the growth of employees, population and multiple sites across the country, communication and interaction with employees had become an issue

E.g. - If one person at the corporate office had to communicate about a report requirement to all sites, the site coordinators would have to go and open personal files or excel sheets (which they hope are updated!) and then put the information in the required report format.

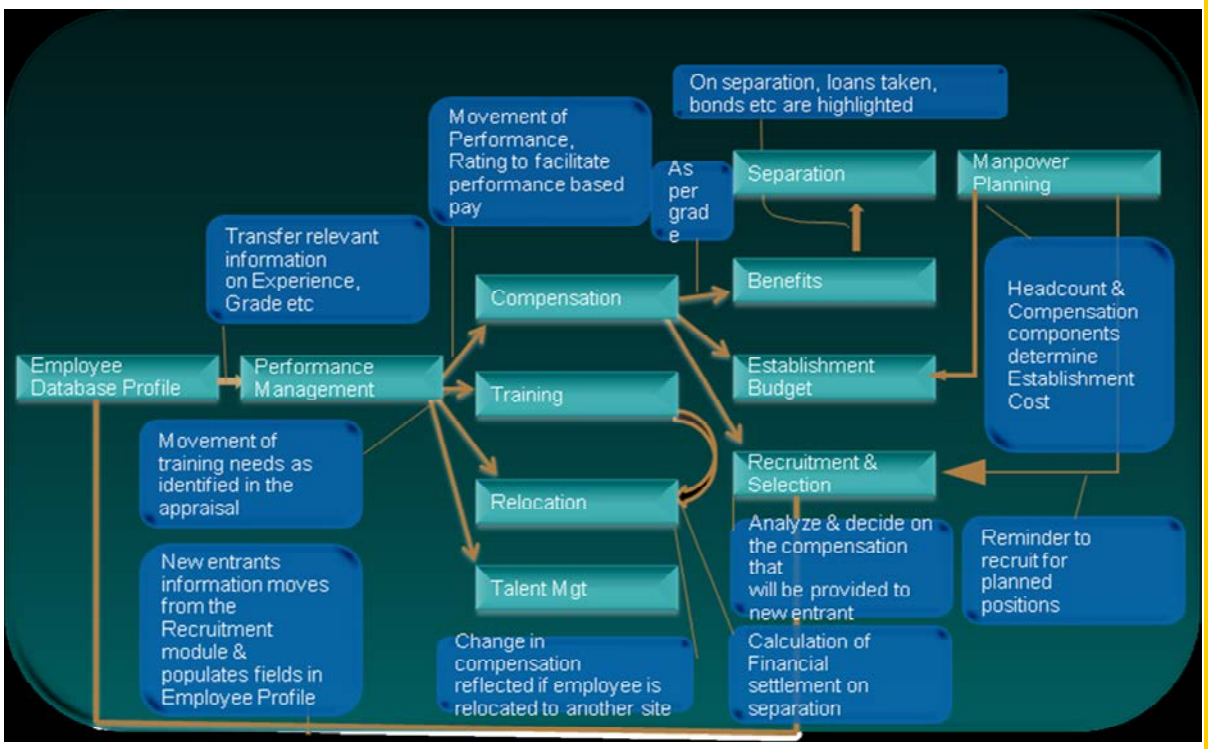
Best Practice Solution

GSKCH opted for a comprehensive centralized and integrated (HRIS) HR Information System that covered all planning modules and created automated HR workflow to address the planning and operational needs. The solution also included an employee intranet that covered all employees.

Objectives of Strategy

The objective of the solution was to leverage technology, to design, develop and implement an HRIS to provide complete integration of HR processes and re-engineer them wherever necessary to implement best practices.

Approach for Implementation



Challenges and Pitfalls

The mix, regulatory requirements in the health sector keep changing and also continue to increase in volume and complexity, thus challenging the implementation of such software.

Key Outcomes

The HRIS application at GSKCH has automated all internal HR processes enabling HR personnel to spend maximum time on analysis and decision-making and play a more strategic role in the organization. The HRIS solution is closely integrated with the Intranet as well as the backend ERP. The solution also offers various other workflow

like leave management, travel management, on-line meeting rooms/guest house bookings and a host of other features.

Telemedicine in Kerala

Problem Statement

- Setting up of Telemedicine & Telehealth education facilities in Kerala using the technology developed under department of information technology
  - The project was designed to link three specialty medical hospitals and four district rural hospitals
  - Continuing Medical Education (CME)

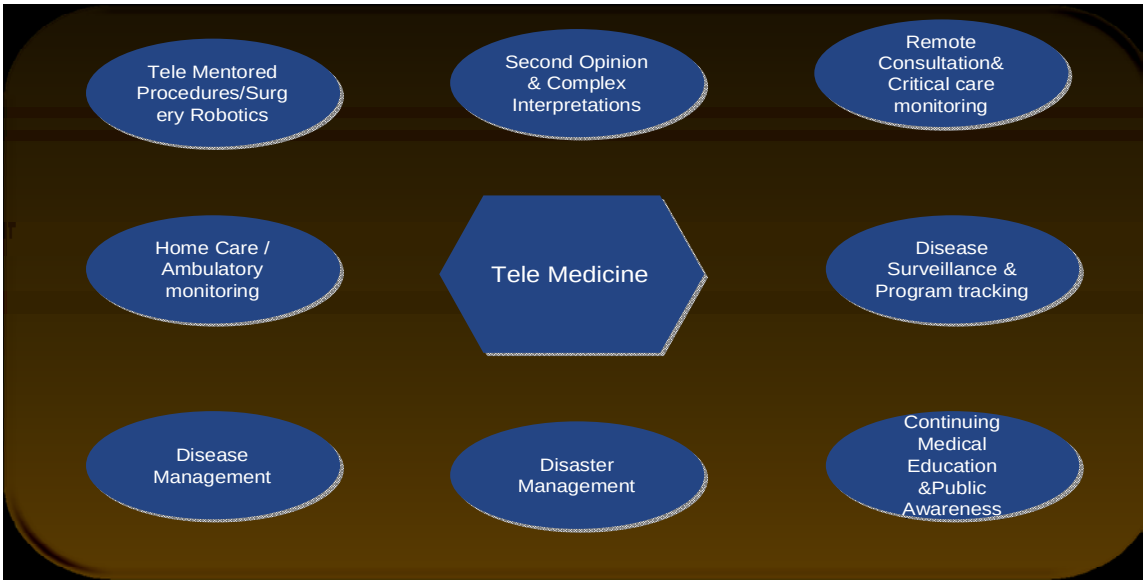
- CancerNet: Telemedicine system for Cancer patients in Kerala
  - Establishment of an Oncology Network for providing Telemedicine services, Cancer detection, treatment, pain relief ,patient follow-up and continuity of care in peripheral hospitals (nodal centers) of Regional Cancer Centre (RCC)
  - Connects RCC, Trivandrum and five nodal outreach centers
  - More than 3000 patients treated/consulted at these nodal centers
  - Major financial benefit to patients

Best Practice Solution

- Install a centralized Telemedicine Hub and server
- Link all the 18 hospitals of this project to Kerala State Wide Area Network (KSWAN) connectivity also so that this can be a back up connectivity for VSAT.
- Enhance the video conferencing facility
- Conduct Workshops
- Training for doctors
- Monitor the Usage

- Ensure the participation of the local bodies through regular meetings
- Coordinate with VSAT Hub and Telemedicine Server at Bangalore for satellite connectivity issues and for accessing the web based telemedicine application
    - Scheduling of tele consultations for the month
    - Update the usage statistics in a central e-Health Portal

Applications



Challenges and Pitfalls

- Connectivity/ Bandwidth (B/W) provision & reliability
- Telemedicine cost consideration/affordability
- Telemedicine platform-H/W,S/W, Video Conferencing
- Basic Equipment (depending on Centre-scanner, digital med equipments)
- Adherence to open platforms and open architecture standards
- Sustainability
- Sourcing Specialist availability
- Trained manpower

Key Outcomes

Patients in remote regions could get preliminary examination, consultation, detection and treatment by doctors from premier hospitals.

Program Management System (MTEF for Health Sector in West Bengal)

Problem Statement

Developing MTEF (Medium Term Expenditure Framework) for the Health Sector in West Bengal

- Making a workable plan to achieve the strategy
- Prioritize and match resource
- Implement MTEF and monitor
- Costing and financial implications

Best Practice Solution

Approach for Implementation

- Need Based Planning
- Estimation of resource requirement for the activities
- Determining Resource envelope and prioritization
- Output and internalization

Best Practice

- Strategize objectives
- Link HSS to HSDI
- Development of Needs plan
- Evaluating plans
- Resource Envelope
- Matching
- Fixed the Timeframe

Objectives of Strategy

- Comprehensive resource planning
    - Allocate available resources according to focus areas/ sectors
    - Identify resource gaps
    - Decision making to augment resources
    - Futuristic planning
- Introduce a medium term perspective in planning of policies, expenditures and revenues

Challenges and Pitfalls

- Making a workable plan to achieve the strategy
- Alignment of multiple internal and external funding sources
- From a 'scarcity' situation to 'plenty'
- From 'planning to plan' to 'planning to implement'
- Identifying the policies with significant financial implications
- Mapping out costing/exp scenarios according to scope, timing
- Constraints of capacity to implement

Key Outcomes

- MTEF should be a process which facilitates move towards strategic resource allocation – not a one-time chance to revolutionize the budget
- A key output is to develop planning and prioritization processes in the DHFW
- A wide range of stakeholders throughout the Dept should be involved – i.e. not a stand- alone exercise.

HMIS Wockhardt Hospital

Problem Statement

- Wockhardt is a major healthcare operator in India and more than 90 countries across the globe. It is India's fourth largest pharmaceuticals company, and also operates a chain of specialty hospitals in the country
- Few of the key issues faced by the hospital were :-

  - Loss of revenue due to billable services not getting billed to patients
  - Increased operating costs due to increasing inventory and staff required for back-end operations
  - Patient dissatisfaction due to the time taken for registration and final billing
  - Reduced access to paper-based medical records, leading to both patient and employee dissatisfaction
  - Inefficiencies due to data in disparate systems not being exchangeable, thus leading to the lack of a single view of patient or hospital information.
- As a solution to these issues and with the division gearing up for accelerated growth, a need was felt to integrate the information and management systems across the hospitals

Best Practice

Milestone-based Litmus Test (MSLT) approach

Objectives of Strategy

- Improved patient care and turnaround
- Automatic alerts to different departments
- Better inventory management with fewer staff

Approach for Implementation

- For implementation, Wipro followed a MileStone-based Litmus Test (MSLT) approach wherein, the implementation was divided into seven milestones. Only after achieving a milestone i.e. after the milestone passed the litmus test as determined by Wipro, the next implementation was proceeded.

For example: The test for the front-office system could be a one-minute registration of a new patient. So, for the front-office system to be accepted as

implemented, and for the team to move on to the next task, this level of performance has to be achieved

- The exchange server for all locations was centralized at the corporate office. At the hospital, there was a two-node Microsoft SQL Server cluster to manage the database, along with a single-node application server (production server) and a single-node staging server
- The implementation was first done for the outpatient departments, and then the inpatient functions were also integrated.

Challenges and Pitfalls

The existing hospitals in Calcutta and Bangalore ran legacy systems that did not handle all the required functions. Nor were they easily amenable to integration across the different hospitals or to a Web interface.

Key Outcomes

- Improved patient care and turnaround time
- Automatic alerts to different departments
- Better inventory management
- Fewer personnel required for back-end activities

Smart Card In Hospital (Brisbane Waters Private Hospital)

Problem Statement

- The hospital acts as the central coast's critical care centre and is the only hospital on the central coast providing a complete range of cardiac services

- The central coast of New South Wales is considered to be one of the fastest growing regions and has a population of around 270,000. The region has 300 general practitioners providing primary care services to the population

- The hospital has 3000 patients registered as part of its chest pain emergency service. The service was established to allow local general practitioners and cardiologists to register patients with known heart disease. The register has allowed the sharing of medical records and immediate access to specialist care should a patient feel chest pain

Approach for Implementation

- BWPH and Smart Health Solutions formed partnerships and invited sponsors in order to implement the technology in their process

- Smart Health Solutions technical staff worked with clinicians and administrators from both BWPH and the local division of general practitioners to design Smart cards for patient

- Inputs for the card was garnered from cardiologists and general practitioners to ensure that the information collected and displayed met the clinicians requirement to make timely and informed decision regarding patient care

- A committee was set to monitor the implementation of the process

- The project began at the hospital on May 2000. letters were send from the CEO of BWPH to 500 patient volunteers who participated in the process

Best Practice

Data provided by the card would pave way to immediate access to key administrative and clinical details twenty four hours a day across the care continuum

Key Objectives

- Allow immediate access to new data through the secure internet connection
- Securely store all information relating to a patients on the system
- No more fragmented paper records

Challenges and Pitfalls

- Fragmented health industry
- Technology awareness among the medical practitioner and staffs

Key Outcomes

- The application is simple and easy for general practitioners and cardiologists to use
- The smart card provided a secure and portable means to access their clinical details by various healthcare providers
- Save substantial amount of money for patients from repeat test and prescriptions

E-Procurement in Andhra Pradesh Health Sector

Problem Statement

- Andhra Pradesh Health and Medical infrastructure department which deals with drugs and medical infrastructure had installed e procurement as a part of the e-procurement initiative taken by the Government of Andhra Pradesh (GoAP).

- A cabinet sub- committee on tender reforms instituted by GoAP in the year 2000 recommended the creation of an e-Procurement market place

- This would facilitate online tendering based on Internet technology to provide 'any where any time' access to the bidders for participating in tendering

- Automation of the procurement transactions reduces human error, enhances the integrity of the data, brings in transparency to the health department procurements and facilitates standardization of processes

- To bring in transparency in e-Procurement, tender documents containing all details are hosted on the web site

Approach for Implementation

- The PPP model is of the Built Owned and Operated (BOO) type was adopted for implementation
- In this case, C1 India owns the system. The GoAP registers the Web site domain name and it is the absolute owner of data. As per the agreement, the GoAP reserves the right to buyout the software and hardware at a pre-specified written down value at the end of the contract period

- A high level steering committee was formed to promote coordination among the departments in different part of the state

- The change management was facilitated with constant monitoring and project champs were assigned to run the program in the department

- Data security was given high priority to improve stakeholder confidence

- During the first stage templates of different procurement practices and electronic requests for proposals were formed and transmitted to the vendors. This allowed the health department to import vendor responses and to track and maintain the responses electronically

- To attain a gradual transition from manual tendering to e procurement the health department made e-Procurement mandatory for all procurements exceeding a value of $250,000 in the first phase and was subsequently lowered to $125,000 at the end of the Pilot phase

Best Practices

- Effective tracking and creation of contracts
- Create global sourcing opportunities by integrating with thee-marketplaces in the segment
- Reduction in procurement cost & cycle time
- Obtain better pricing from suppliers by Purchase Volume Management
- Tracking and evaluation of deliveries from the suppliers

- Improved the Information Management and decision making systems for suppliers and product
- Information, Sourcing Evaluation and Management, Contract Management

Key Objectives of Strategy

- Reduce the time and cost of doing business for both vendors and government
- Standardize the procurement processes in the health department
- Increase buying power through demand aggregation
- Provide a single-stop shop for all procurements
- Equal opportunity to all vendors bring transparency and reduce corruption

Challenges and Pitfalls

- Change management
- To arrive at a sustainable business model for e procurement in the indian context
- Ensuring strong drug supplier interaction with the e procurement solution

Key Outcomes

- The tender cycle time has gradually come down to an average of 42 days over a period of one year and further reduced to 35 days at the end of the second year
- Yielded a reduction of 16% in the quotations in comparison to the previous years when the procurement was manual
- Reduced subjectivity in tender evaluation and helped to curb opportunities for corrupt practices to a significant extent and increased the accountability of procurement officials

File Management and Tracking System

Problem Statement

An advanced file information system, to track files of the offices of the state government, in a manageable realm of electronic governance, utilizing the core strengths of Information Technology. This system makes the government more transparent and approachable for the citizens, bringing benefits in its overall governance.

Software entails electronic tracking of file movement and making electronic copy of every file that would come to the secretariat. "Making electronic copies of file would require scanning of all the files. Then it would also require introducing a system for putting up notes on files electronically and putting up electronic signature of official concerned

Approach for Implementation

- Haryana framework envisages provisioning of user-id/password based access & authentication, publishing all rules, acts, instructions and integrating e-office suite applications. The development and implementation of e-office application software packages in Haryana civil secretariat is at various stages.

- The project is technology intensive, therefore, in addition to in-house s/w development team, the requirement of services from appropriate technology partners have been Planned. Technology support on the software tools, being used for software development and deployment and standardizing application for the state level etc is required. Keeping in view the need for bringing the administrative process re-engineering and amendment in manual of services records, a gap analysis is being carried with the existing e-office Suite of Haryana

- A phased plan has been prepared for the implementation of the project, starting with a pilot implementation, for meeting all the deliverables for complete automated governance through Intra Haryana Portal.

Best Practices

- Impart Training to employees to get maximum benefits
- An exclusive server has been installed for CeFMaTIS
- Lay down the procedure for managing and implementing the software
- Let files be handled by software in slots like 1000 files per day to remove confusion

Key Objectives of Strategy

- Bring Transparency in the system
- Fix accountability for disposal of each case/file
- Replace manual record keeping system for files with a more efficient paperless automated
- Allow availability of the information about any file from anywhere, anytime.
- Provide better control on the movement of files to the controlling officers
- Provide necessary inputs to the decision makers about the work-studies

Challenges and Pitfalls

- Personnel are not accustomed to work on electronic versions of files
- Conversion of files to soft version is a challenge as number of files are huge
- Employees are not very open to such a change, Change management need to be effectively handled

Key Outcomes

- The citizens can obtain online information easily
- The government obtains advanced information system facilitating efficient administration

- The solution replaced the manual record keeping system for files/ letters with a more efficient paperless automated system
- Information about any file can be located easily from anywhere, anytime
- Officers are able to monitor the movement of files and give instructions accordingly
- It provides necessary inputs to decision-makers and enhance efficiency of the departments

Financial Management Information System (Liberia)

Problem Statement

An Integrated Financial Management Information System (IFMIS) is a budget management and accounting system for a government, with other functions being included as appropriate for a specific country. The core components include the general ledger, budget management, agency budget execution and cash management. The non-core components include budget preparation, debt management, payroll and tax administration and a number of other possible
areas which are seen as supportive to the core modules.

Approach for Implementation

First Phase

- General ledger
- Cash management
- Purchase order management
- Accounts payable with commitment role
- Account receivable
- Budget preparation and integration with payroll and HRMIS

Second Phase

- Interface with integrated tax administration system
- Fixed asset management system at general service agency and stores management

Best Practice

- Follow an incremental approach rather than big bang approach
- Prepare a project charter for FMIS implementation
- An outline of constraints and assumptions affecting the planned process should be laid down
- Consider a list of critical success factors
- Identify high level project risks

Key Objectives

- Give mobility to resources
- Release accounting and financial reporting which will ensure timely and accurate information regarding project resources and expenditures
- Integration of FMS with pay roll package, inventory management, research project management, personnel information system, library information system, monitoring and evaluation system.

Challenges and Pitfalls

- Lack of integration among the units
- Data incompatibility compromises decision making
- Excessive physical processing of documents
- Low security level

Key Outcomes

- Integrate revenues, expenditures, assets and liabilities to produce full financial statements
- Builds a commitment control system that ensures fiscal discipline
- Put in place the ledger with efficient bank reconciliation processes and reports
- Puts in place with adequate internal controls and audit trails
- Credible human resource database to process payroll

7. Gap Analysis

The process that involves the identification of gaps between the current state and the future or desired state is the beginning point for implementation of the improvement process. The process of identifying gaps includes a deep analysis of the External factors that have created the current state; the groundwork has been laid for improvement planning. The Gap analysis process can be used to ensure that the improvement process does not jump from identification of problem areas to proposed solutions without understanding the conditions that created the current state.

This section would identify the gaps between the DoHFW current scenario and the envisaged scenario. The envisaged scenario can be a scenario/ compilation of scenarios which are considered to be best practice in the various health departments or it could be a scenario designed specifically to suit the needs to the Department of Health and Family Welfare in Orissa.

6.1 Stakeholders Gap Analysis

This section will compare the services that should be offered and expected by the various stakeholders and the actual services received by them.

Issue Addressed	Stakeholders	ICT Interventions Suggested	Benefits to Stakeholders
Right to Information	Citizens(Patients, Relatives), Businesses(Drug Manufacturers)	Health Portal	Enable citizens in seamless access to variety of information regarding the department and its services. Online tracking of status of grievances, Online Submission of application for drug manufacturing will be active component in the web portal.

Administration and monitoring of medical services.	Department, GOI, NGOs, Private Nursing homes etc.	Health Management System (Departmental Application)	An integrated application that caters to the need to bring about a comprehensive Process level automation in the H & FW Department.
Administration and Departmental Functions	Citizens, students, Employees of Health & Family Welfare Dept	Hospital Management Information System(Departmental Application)	A comprehensive Hospital Management System with connectivity envisaged till the PHC level for better management of health care institutions. The system is envisaged for individual medical institutions to automate the entire health care and routine office functions.
		College Management System (Departmental Application)	A comprehensive Medical College Management System with major modules covering the broad spectrum of functions of the institutions: Student Management Module, College Management System and Training & Research Module
		Health Management System (Departmental Application)	Integrated Applications that caters to the need to bring about a comprehensive Process level automation in the H & FW Department.

Accessibility to Departmental Services (Namely Clinical care)	Doctors, Medical Students, Patients from rural areas	Telemedicine	Remote Medical care institution will be linked to a specialist centre through traditional phone lines, satellite and broadband connectivity. Reach out to the rural mass in need of expert opinion on their health conditions Specialists from various streams of medicine identified. Saving of time and cost for the patients
Procurement of Drugs and other Medical commodities	Department, Businesses', Hospitals, Doctors and Patients	E- Procurement	Streamlining the process of drug purchase and spare parts, battery purchase etc. by the Introduction of E-Tendering will reduce the waiting time.
Disease Monitoring	Department, GOI, NGOs, WHO etc.	Integrated Disease Surveillance and Response System	Monitoring health across state and taking preventive and reactive steps in case of report of any disease. The process will have in built checks and balances and will generate alerts.

6.2 Service Gap Analysis

There exist several disparities between the visualized target and the existing state of service delivery in DoHFW. In this section, we have analyzed the gaps that exist between the current system and the target system. This analysis would facilitate in mapping the future course of action. The Gap Analysis has been carried out from various perspectives which are given below:-

- People Perspective
- Process Perspective
- Technology Perspective

Major gaps that have been identified under each of these perspectives and a summary of key improvement areas identified to achieve the targeted outcome of the project are detailed below:

People Observations

An analysis of the present level of understanding of the employees in terms of IT automated scenario reveals low level of awareness among process executants on technology. Upon discussions with the employees at various levels few observations were made, which if addressed properly can help to further fulfill the capacity building needs. Following improvements areas were identified during the AS-IS process study:

- Limited availability of human resources with requisite skills to take up service delivery through Information Technology and low exposure in the usage of IT systems
- There isn't clarity on the role an individual performs
- Ineffective technical training facilities stands a major hindrance to the technical capacity enhancement of the workforce
- No mechanism to record public feedback which does not get reflected while considering employee's performance
- No emphasis is given to building domain knowledge of employees in their respective domain and section/department

Even after the basic training on computer has been imparted, employees still feel the requirement of more orientation to work independently on computers.

Process Observations

The process of service delivery w.r.t. application processing, record maintenance, data tracking, etc is being done physically (i.e. no automation). During the AS-IS process mapping the consultants have explored a scope for process engineering and identified following constraints / bottlenecks –

- In most of cases, the entire activities starting from the application submission till the document delivery takes place manually, which makes the life cycle of the process time consuming and complicated
- There are certain redundant and non-value added activities in the current process involved with service delivery in terms of the file movement, way of conducting verification, review & approval, which results in prolonged service levels
- For the services involving inter-departmental interaction, the process becomes highly complex and networked. Manual movement of file makes the process prone to delays
- There are no proper channels for dissemination of information about services to recipient and no facility for remote access to information on the same
- The beneficiaries have to make multiple visits to the concerned offices and the number of visits varies from case to case to avail the services

The entire data and records are maintained manually which makes the retrieval of data very difficult, hence delaying the decision making process.

Technology Observations

The analysis of the AS-IS study reveals that optimum IT infrastructure is still not available at the concerned departments. Though many departments have computers and printers but they are not being used effectively. Due to the manual nature of the existing processes, benefits of IT enablement can be leveraged to improve and streamline the service delivery mechanism. Following improvement areas have been identified where technology intervention can help to achieve the objectives of the Authority

- There is no application or a centralized database or any other mechanism for sharing data between the various departments and the issuing authorities, which is one of the major delays in the processes. File Monitoring System (FMS) should be used effectively and needs to be rolled out across all departments of the Authority
- No network connectivity exists between the various associated offices at various levels.
- No IT application is available for tracking the application status and provide remote access to information between the Authority and various stakeholders
- Use of technology is limited. Wherever existing, it limits to usage for typing and entering the details at the clerical level only.

8. Key Recommendations

7.1 People Perspective

To understand and operate the computerized systems in a new e -Governance environment it requires a different level of skill set, currently possessed in a very limited quantity by DoHFW staff. Following are some of the suggestions related to the employees which need to be focused upon:

1. Role clarity: Job descriptions need to be formulated for each post. Employees must be hired based on these job descriptions. Every employee must be given a clear set of roles and responsibilities on the very day he/she joins DoHFW. These can be modified in future based on the appraisals given to them or when they are transferred / deputed to other departments. Any change in the role must also be formally communicated to the employees in written. To deploy the e-governance system, role clarity of officers in each department and access control needs to be identified.
2. Emphasis on soft skills: In the current state of DoHFW, there is very little emphasis on the soft skills of the employees. These soft skills include ability to communicate clearly with the citizens and responding to the citizen queries in a timely and pleasant manner. It is suggested that the training classes for the employees include aspects of dealing with the citizens in a positive, sociable and prompt manner.
3. Training manuals: Every department needs to be in possession of training manuals covering all aspects of the employee training issues including software, hardware and soft skills. These manuals must be in English as well as in local language.
4. Competency levels in usage of IT: Every employee must also be trained on domain expertise in their respective domain and department. Competency levels in usage of computer, familiarity of software, Information Security

basics, basic hardware trouble shooting skills, awareness of department rules and regulations etc., needs to be defined by the Authority and all the employees must be benchmarked and motivated to attain the minimal acceptable proficiency levels. Plans for continuity training of existing and new staff need to be developed and suitably budgeted as an annual expenditure of the departments.

5. Monitoring and Rewarding: To increase the employee motivation levels, the Authority must analyze long term and short-term measures. Currently the Authority does not have well defined Performance Monitoring and Evaluation Mechanisms for certain important sections of the staff. These sections must also be adequately monitored and rewarded for good performance. It is suggested that certain cultural changes in the Authority be introduced by conducting monthly get-togethers and motivating good performers on these occasions through special mentions and department-wise rewards. Appreciation letters, commendation letters, citations etc., from the Authority head would go a long way in enhancing employee performance levels. Public feedback may also be incorporated while considering an employee's performance.
6. Career Planning: The career growth opportunity of some sections of the staff appears to be limited. Identification and creation of career growth opportunities for all the sections may be undertaken as an exercise to promote and increase competency levels and competitiveness among the employees.
7. Adequate Staffing: To carry out effective service delivery, it is essential to have required personnel. During the study phase, it was noticed that many of the departments had inadequate manpower to carry out essential services due to which service delivery is affected.

7.2 Process Perspective

The assessment of Business Processes is based on a generic framework which recognizes that there are a number of structural elements which needs to be in place for process management and for it to satisfy the overall intent and meet the needs of the customer. Some of the recommendations are as below:

1. There should be facilities to track the status of the applications for the citizens and also to monitor the status of the applications for the employees of DoHFW.
2. Alternate service delivery points need to be introduced
3. Proper dissemination of information through the web portal and also through other service delivery centers needs to be introduced
4. The time taken for physical verification needs to be cut down and also a database should be created in parallel so that the physical verification can be eliminated at a later stage by matching the details provided with the information stored in the database
5. The redundant and repetitive non-value added activities should be eliminated through Business Process Re-Engineering and the relevant legal changes should be made to carry out these processes in a more efficient and prompt manner
6. Drawing up of service levels to each of the activities and strict adherence to the same so that the overall service delivery time can be reduced
7. Patient Manual records should be computerized and maintained in a database for making the tracking process easy.
8. Digitization of all registers, forms and Legacy data
9. Each complaint must be internally routed to the respective department immediately for further action.

7.3 Technology Perspective

This section enables to understand the areas which DoHFW needs to address in order to improve their IT capability and Governance. The aim is to give DoHFW an idea on how well it is performing compared to some of the best practice. The analysis also aims to create awareness of management and control issues that may be addressed to improve the overall process capability. The following are the key recommendations:

1. Overall IT architecture of DoHFW must promote reduced complexity and enable integration and interoperability.

2. Total Cost of Ownership, including consideration of costs and benefits across DoHFW, for applications and technologies (hardware and software) must balance development, support, disaster recovery and retirement costs along with the costs of flexibility, scalability, ease of use/support over the life-cycle of the technology or application
3. All information must have defined 'authoritative sources'. These sources will act as 'information stewards'. Authorized data must be accessible and available for re-use by any entitled system and/or business process.
4. ICT should support client delivery channel preferences in accessing the services
5. Implemented infrastructure must be robust, responsive and reliable, with appropriate redundancy to protect against system failure
6. Facility to provide online payment system
7. Enabling interdepartmental communication through the DoHFW integrated web portal
8. Introducing an appropriate platform for monitoring and status tracking of citizen services
9. Encourage the private sector participation in creation and management of IT related infrastructure to provide services on the basis of self sustainable revenue model
10. An end to end application to manage the entire operation under the grievance ,right from registration of the grievance to the resolution of the same with the facilities to produce MIS on various parameters

7.4 Stakeholders Expectations and Recommendations

Customer Type	e-Governance Expectations	What needs to be done to meet expectations
Citizens	a. Single and easy point of contact for medical service. Citizens should be able to quickly and easily learn about different	1. Develop a portal which provides services directory such that the citizens may avail the services without the need to know which

Customer Type	e-Governance Expectations	What needs to be done to meet expectations
	services offered by the department and how to request such services b. Clear and accurate information about each service. Citizens should be able to use e-Governance channels to follow up and track the progress of their transactions (Med Reports etc.) remotely and conveniently. c. Efficient and effective resolution of complaints. Complaints should be resolved promptly and citizens must be kept abreast of the progress made in resolving their complaints d. Citizen oriented and transparent service delivery processes. Citizens should be shielded from the various internal operations and activities involved in delivering from the service. Citizens should not be requiring interfering in inter-departmental communications to expedite the processing of their transactions.	department provides that services 2. Provide information on procedures and downloadable forms on the internet and make them available through various channels 3. Re-engineer processes and redesign forms to make it easier for the citizens to demand and avail services 4. Device a feedback mechanism so as to get constant feedback and adapt to citizen needs and demands 5. Increase the number of access channels to avail the citizens to demand and avail service at the time and place of their choice 6. Develop and follow standards/guidelines for interdepartmental data transfer to expedite flow of information between departments 7. Develop content in local as well as English language 8. Create and follow formal content management processes to ensure that the content is regularly updated and correct 9. Establish single window multiple service counters throughout the state 10. Service levels should be defined for every service, to measure the quality of service delivery. A service level should be agreed upon by responsibility authority for each of measurable outcomes. 11. Market e-governance initiatives and benefits. Incentives to promote channel shift could also be provided to citizens 12. Establish data privacy and protection laws and online transaction mechanisms to develop

Customer Type	e-Governance Expectations	What needs to be done to meet expectations
		confidence and trust
Business	a. Single and integrated view of the business relationship across all departments and services. Business expects the government departments to take a consolidated view of their transactions across all departments. Business should no longer be required to provide the same information repeatedly and follow up transactions across departments b. Simplified decision cycles. Businesses require the e-governance services to be supported by simplified decision cycles to facilitate faster turnaround times c. Electronic exchange of information with other governmental organizations. Business requires the government to integrate electronically with other governmental organizations. This would help minimize the time required for compiling, endorsing and validating official documents collected from various other governmental organizations.(e.g.- as in the case of medical insurance)	1. Develop a G2B portal for businesses for information on all types of procedures and requirements regarding approvals, clearance etc. 2. Make e-procurement for procuring items mandatory or make it mandatory for all departments to buy a certain % of their annual procurement online 3. Re-engineer processes and redesign forms to make it easier for the Businesses to demand and avail services 4. Develop and follow standards/guidelines for interdepartmental data transfer to expedite flow of information between departments so that the businesses are not required to furnish the same information to multiple agencies 5. Enhance the participation of the private sector through PPP 6. Establish data privacy and protection laws and online transaction mechanisms to develop confidence and trust
Employees	a. Reduce the workload of the employees, who need to perform the same task repeatedly	1. Computer and IT awareness training, project management and vendor management training

Customer Type	e-Governance Expectations	What needs to be done to meet expectations
	b. Better MIS systems for improving the internal efficiency of the department	2. Develop a comprehensive Human Resource Management System including a portal for employees to monitor their benefits accrual, leave entitlement etc. 3. Automate the routine task to facilitate the government employees to undertake higher value work 4. Regular training and seminars for career development, skills addition etc. to motivate employees and enhance their service delivery skills 5. Establish data privacy and protection

9. Way Forward

The following are the next steps to be conducted

- Analysis of data

The analysis phase would involve a detailed BPR exercise to stream line processes to address needs and expectations of process owners and department officials. This would help to identify services that needs to be combined with other services/ elimination of certain services based on Business Process Re-engineering study. There would be a detailed analysis of processes to assess the information gap w.r.t. overall goals of the project.

- Business Analysis Report

Business Analysis Report would be prepared covering potential process improvement areas, list of services to be automated

- Functional Requirement Specifications

Functional Requirement Specification document would be prepared for identified services. The document would capture detailed functionality of the proposed automated services.

- System Requirement Specifications

System Requirement Specification document would be prepared for identified services. The document would capture module wise details in consultation with process owners and users. This document would create a stage for development of software in the subsequent phase.

- Comprehensive RFP for Data Digitization and Hardware Procurement

RFP would be prepared covering amount of data to be digitized, service level parameters and metrics for vendor.

- Change Management Plan

Change management plan would be developed to address the training requirements of the government staff identified during the subsequent phase.

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