Part 1

INTERNSHIP REPORT

A.PROFILE OF THE ORGANIZATION

Accenture is a global management consulting, technology services and outsourcing company, with more than 246,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments.

Accenture's "high performance business" strategy builds on the expertise in consulting, technology and outsourcing to help clients perform at the highest levels so they can create sustainable value for their customers and shareholders. The company identifies new business and technology trends and develops solutions to help clients around the world:

- Enter new markets.
- Increase revenues in existing markets.
- Improve operational performance.

Deliver their products and services more effectively and efficiently.

Accenture have extensive relationships with the world's leading companies and governments and work with organizations of all sizes—including 92 of the Fortune Global 100 and more than three quarters of the Fortune Global 500. Company's commitment to client satisfaction strengthens and extends our relationships. Among the much strength that distinguishes Accenture in the marketplace are:

- Extensive industry expertise.
- Broad and evolving service offerings.
- Expertise in business transformation outsourcing.
- History of technology innovation and implementation, including our research and development capabilities, on which we spend approximately $300 million annually.

- Commitment to the long-term development of our employees.
- Proven and experienced management team.

B.CORE VALUES AT ACCENTURE

- ✓ **Stewardship:** Building a heritage for future generations, acting with an owner mentality, developing people everywhere we are, and meeting our commitments to all internal and external stakeholders.
- ✓ **Best People:** Attracting and developing the best talent for our business, stretching our people and developing a "can do" attitude.
- ✓ **Client Value Creation:** Improving our clients' business performance, creating long-term, win-win relationships and focusing on execution excellence.
- ✓ **One Global Network:** Mobilizing the power of teaming to deliver consistently exceptional service to our clients anywhere in the world.
- ✓ **Respect for the Individual:** Valuing diversity, ensuring an interesting and inclusive environment, and treating people as we would like to be treated ourselves.
- ✓ **Integrity:** Inspiring trust by taking responsibility, acting ethically, and encouraging honest and open debate.

C.ACCENTURE HEALTH SOLUTIONS

Accenture Health delivers a wide range of healthcare solutions—from health information management and electronic medical records to clinical transformation and health analytics. Its solutions are backed by real-world experience, business and clinical insights and innovative technologies. Accenture Health helps organizations around the world use knowledge in new ways for more effective, efficient and affordable healthcare with Insight Driven Health.

Health providers

From physician groups and community hospitals to academic medical centers, healthcare providers have opportunities to deliver better healthcare. Taking advantage of new technologies and using innovative care delivery models, healthcare providers can use

knowledge in new ways to deliver more effective, efficient and affordable healthcare with Insight Driven Health.

Health plans

Healthcare reform is driving sweeping change for private health plans. Meeting these demands means using knowledge in new ways to drive more effective, efficient and affordable healthcare with Insight Driven Health. Complex issues like mandates to cut costs to the impact of payment reform and new business models are met effectively.

Public health

Public health organizations the world over share a common goal—improving patient care, efficiency and safety while lowering healthcare costs. In today's era of widespread healthcare reform, many of these agencies are leading the way toward significant change. Yet public health organizations must move ahead in the face of legislative and regulatory mandates, scarce resources, new technologies and changing patient safety access and privacy needs.

D. INSIGHT DRIVEN HEALTH FOR U.S STATE HEALTH ORGANIZATIONS

The convergence of cost pressures, healthcare reform and technology changes are redefining the landscape for U.S. state healthcare organizations. Because the number of people who depend on them for healthcare is growing while budgets are not, improving the reach and impact of the money they spend—doing better with less—is critical. In addition, taking advantage of healthcare reform incentives means improving program performance while serving growing numbers of recipients—striking the balance between lowering per-recipient costs and providing quality services.

Accenture Health works with state healthcare organizations to help them transform these challenges into opportunities by using knowledge in new ways across their organizations. This helps organizations achieve Insight Driven Health—the foundation for more effective, efficient and affordable healthcare. Accenture healthcare solutions address administrative, operational,

clinical, business and technological needs. They help states to:

- **Transform:** Modernize Medicaid Management Information Systems with a sustainable model.
- **Save.** Lower administrative costs such as enrollment, billing, claims processing, and provider and recipient services while reducing waste, fraud and abuse.
- **Connect.** Use healthcare IT to connect fragmented healthcare systems and stakeholders by integrating electronic health records and health information exchanges and establishing regional extension centers.
- **Align.** Link e-health policies, processes and functions across agencies to support Medicaid healthcare goals.
- **Comply.** Leverage healthcare reform opportunities and reduce risk of penalties.
- **Improve.** Use healthcare analytics to improve healthcare quality and outcomes.
- **Innovate.** Explore new pharmacy benefits management approaches, proactive health management solutions and integrated care delivery models that incorporate non-medical supportive services.
- **Rethink.** Improve the effectiveness and cost efficiencies of business functions with healthcare consulting and business process outsourcing solutions.

E.ACCENTURE DIGITIZED HEALTH SOLUTIONS

From electronic medical records and medical imaging to tablet computers and telemedicine, the realm of digital has entered healthcare. Not only is digital health here to stay, it is poised to reinvent healthcare as the world knows it.

Going paperless has been a promising answer for the healthcare community as organizations look to reduce healthcare costs, improve health outcomes and respond to healthcare reform incentives and penalties. By integrating digitized health information into the workflow, organizations are improving clinical and financial outcomes. In the United States alone, Accenture estimates that nearly 90 percent of hospitals over the next three years will invest to install or upgrade their EMRs to meet meaningful use requirements.

Digitized medical data is driving the next wave of insight-driven healthcare and enabling a future of patient-centered care models.

Accenture Health helps organizations answer questions like these as part of their move toward Insight Driven Health—using knowledge in new ways for more effective, efficient and affordable healthcare. Accenture help organizations throughout their digital journey—from implementation through adoption and support. Their digital healthcare consulting and insight-based solutions are comprehensive and tailored to each client's unique needs.

F. Business Analysis Training

The primary purpose of the two weeks business analysis training was to define the profession of business analysis. The training is a framework that describes the business analysis tasks that must be performed in order to understand how a solution will deliver value to the sponsoring organization. The form those tasks take, the order they are performed in, the relative importance of the tasks, and other things may vary, but each task contributes in some fashion, directly or indirectly, to that overall goal.

Objectives of Business analysis training program:-

- Identify business analysis best practices
- Describe the Business analysis body of knowledge (BABOK) guide
- Identify the phases in the business analysis process
- Describe the role of the BA

What is Business Analysis:

Business analysis is the set of tasks and techniques used to work as a liaison among stakeholders in order to understand the structure, policies and operations of an organization, and recommend solutions that enable the organization to achieve its goals. –BABOK

Business Analysis Body of Knowledge (BABOK) is a "Guide" that contains a description of generally accepted practices in the field of business analysis.

Knowledge areas define what a practitioner of business analysis needs to understand and the tasks a practitioner must be able to perform. The key knowledge areas described in BABOK are:

- Business Analysis Planning and Monitoring
- Elicitation
- Requirements Management and Communication
- Enterprise Analysis
- Requirements Analysis
- Solution Assessment and Validation

G. Business Analysis Planning and Monitoring

Business Analysis Planning and Monitoring describes how to determine which activities are necessary to perform in order to complete a business analysis effort. It covers identification of stakeholders, selection of business analysis techniques, the process we will use to manage our requirements, and how we assess the progress of the work in order to make necessary changes in work effort. Business analysis planning is a key input to the project plan, and project management responsibilities include organizing and coordinating business analysis activities with the needs of the rest of the project team.

The Purpose of business analysis planning and monitoring is to plan the execution of business analysis tasks, update or change the approach to business analysis as required and assess effectiveness of and continually improve business analysis practices

The main tasks that are performed are:

1. Conduct Stakeholder Analysis
2. Plan Business Analysis Activities
3. Plan Business Analysis Communication
4. Plan Requirements Management Process
5. Plan, monitor and Report on Business Analysis Performance

Table 1 -The following table describes each task in detail

Task	Purpose	Inputs	Output
▪ Conduct Stakeholder Analysis	▪ Identify stakeholders who may be impacted by a proposed initiative or who share a common business need. This task includes determining appropriate stakeholders for the project or project phase, and analyzing stakeholder influence, authority (approve, sign off, veto), and project attitude.	▪ Organizational Standards ▪ Defined Business Problem/Opportunity	▪ Stakeholder list ▪ Stakeholder roles and responsibility designation
▪ Plan Business Analysis Activities		▪ Stakeholder list ▪ Stakeholder roles and responsibility	

	▪ Determines which activities are required to define the solution to a business problem, how those activities will be carried out, the work effort involved, and an estimate of how long the activities will take. ▪ Identifies business analysis deliverables ▪ Determines the scope of work for the business analysis activities ▪ Determine tasks for the business analysis activities in the Knowledge Areas: Enterprise Analysis, Elicitation, Requirements Analysis, Solution Assessment and Validation.	designation ▪ Organizational Standards	▪ Business Analysis Plans for: ▪ Enterprise Analysis ▪ Business Analysis Planning and Monitoring ▪ Elicitation ▪ Requirements Analysis ▪ Solution Assessment and Validation ▪ Requirements Management and Communication

	Detail will vary from KA to KA. ▪ Identifies task dependencies, and interfaces between tasks ▪ Develop estimates for BA work (time, skill level, complexity of tasks, etc.)		
Plan Business Analysis Communication	▪ Determine what information the various stakeholders need to be provided about the results of business analysis and the forms it should take (verbal, written, etc). It includes considerations for, as well as constraints, impacts, durability and trade-offs of different communications media.	▪ Stakeholder list ▪ Stakeholder roles and responsibility designation ▪ Business Analysis Plan(s)	▪ Business Analysis Communication Plan

▪ Plan Requirements Management Process	Describes how to determine the appropriate requirements process for a particular initiative. It describes how we determine what is currently in place, and how to create the process if it doesn't exist. It includes determining whether and how requirements are changed, which stakeholders need to approve (instead of the actual approval of requirements), as well as who will be consulted on, or informed of changes, etc. It also includes the approach to requirements traceability and determining which requirements attributes we will capture.	▪ Organizational Standard ▪ Business Analysis Plan(s)	▪ Requirements Management Plan
▪ Plan, monitor and			

Report on Business Analysis Performance	▪ Determine which metrics will be used to measure the work performed by the business analysts. It includes how we track, assess, and report on the quality of the work performed by business analysts and take steps to correct any problems that may crop up. If problems are identified, determine appropriate corrective action (which may feed into the development of future plans on this or other projects).	▪ Organizational Performance Standards ▪ Actual Performance Metrics ▪ Business Analysis Plan(s) ▪ Requirements Management Plan	▪ BAPerformance Assessment ▪ Lessons Learned ▪ Process improvement recommendation

H. Elicitation

Elicitation describes how we work with stakeholders to find out what their needs are and ensure that we have correctly and completely understood their needs. The purpose of elicitation is to explore, identify and document stakeholder needs.

The main tasks that are performed in elicitation are:

1. Prepare for elicitation
2. Conduct elicitation
3. Document elicitation results
4. Confirm elicitation results

Table 2 : The following table describes each task in detail

Tasks	Purpose	Inputs	Outputs
▪ Prepare for Elicitation	▪ Prepare for elicitation by ensuring all needed resources are organized and scheduled for conducting the elicitation activities.	▪ Stakeholder list ▪ Stakeholder roles and responsibility designation ▪ Either Defined Business Problem/Opportunity or Business Case and Solution Scope ▪ -Elicitation plan	▪ Scheduled resources ▪ Supporting materials
▪ Conduct Elicitation	▪ Meet with stakeholder(s) to elicit information regarding their needs	▪ Supporting materials ▪ Either (Defined Business Problem/Opportunity) ▪ or (Business Case and Solution Scope) ▪ -Organizational	▪ Elicitation activity results ▪ Assumptions, constraints, risks, ▪ issues ▪ Documentation based on technique (e.g., interview notes,

		standards	workshop results, survey responses, etc.)
▪ Document Elicitation Results	▪ Record the information provided by stakeholders for use in analysis	▪ Elicitation activity results	▪ Stated requirements
▪ Confirm Elicitation Results	▪ Validate that the stakeholder's intentions have been correctly captured and understood	▪ Stated requirements	▪ Validated stated requirements

I. Requirements Management & Communication

The *Requirements Management and Communication* Knowledge Area describes the activities and considerations for managing and expressing requirements to a broad and diverse audience. These tasks are performed to ensure that all stakeholders have a shared understanding of the nature of a solution and to ensure that those stakeholders with approval authority are in agreement as to the requirements that the solution shall meet.

Communicating requirements helps to bring the stakeholders to a common understanding of the requirements. Because the stakeholders represent people from different backgrounds and business domains, this communication is both challenging and critical to the success of any initiative. It involves determining which sets of requirements are relevant to a particular

stakeholder group and presenting those requirements in an appropriate format for that audience.

Management of requirements assists with understanding the effects of change and linking business goals and objectives to the actual solution that is constructed and delivered. Over the long term, it also ensures that the knowledge and understanding of the organization gained during business analysis is available for future use.

The main tasks that are performed in Requirement management and communication are:-

1. Manage Solution Scope and Requirements
2. Manage Requirements Traceability
3. Maintain Requirements for Re-use
4. Prepare Requirements Package
5. Communicate Requirements

Table 3-The following table describes Requirement management and communication each task in detail

Task	Purpose	Input	Output
▪ Manage Solution Scope and Requirements	▪ Obtain and maintain consensus among key stakeholders regarding the overall solution scope and the requirements that will be implemented.	▪ Requirements Management Plan. ▪ Solution Scope. ▪ Stakeholder List, Roles, and Responsibilities. ▪ Stakeholder, Solution, or Transition Requirements [Communicated	▪ Requirements [Approved]

		or Traced]	
▪ Manage Requirements Traceability	▪ Create and maintain relationships between business objectives, requirements, other team deliverables, and solution components to support business analysis or other activities.	▪ Requirements Management Plan	▪ Requirements [Traced]
▪ Maintain Requirements for Re-use	▪ To manage knowledge of requirements following their implementation.	▪ Organizational Process Assets ▪ Requirements	▪ Requirements [Maintained and Reusable]
▪ Prepare Requirements Package	▪ To select and structure a set of requirements in an appropriate fashion to ensure that the requirements are Effectively communicated to, understood by, and usable by a stakeholder group or groups.	▪ Business Analysis Communication Plan ▪ Organizational Process Assets ▪ Requirements - Requirements Structure:	▪ Requirements Package
▪ Communicate Requirements	▪ Communicating requirements is	▪ Business Analysis	▪ Communicated

	essential for bringing stakeholders to a common understanding of requirements.	Communication Plan ▪ Requirements ▪ Requirements Package	Requirements

J. Enterprise Analysis

The Enterprise Analysis describes the business analysis activities necessary to identify a business need, problem, or opportunity, define the nature of a solution that meets that need, and justify the investment necessary to deliver that solution. Enterprise analysis outputs provide context to requirements analysis and to solution identification for a given initiative or for long-term planning. Enterprise analysis is often the starting point for initiating a new project and is continued as changes occur and more information becomes available. It is through enterprise analysis activities that business requirements are identified and documented.

Table 3- The following table describes enterprise analysis each task in detail

Task	Purpose	Inputs	Output
▪ Define Business Need	▪ Identify and define why a change to organizational systems or capabilities is required.	▪ Business Goals and Objectives ▪ Requirements [Stated]	▪ Business Need
▪ Assess Capability	▪ To identify new capabilities required by the	▪ Business Need ▪ Enterprise	▪ Required Capabilities

Gaps	enterprise to meet the business need	Architecture. ▪ Solution Performance Assessment	
▪ ▪ Determine Solution approach	▪ To determine the most viable solution approach to meet the business need in enough detail to allow for definition of solution scope and prepare the business case.	▪ Business Need ▪ Organizational Process Assets ▪ Required Capabilities	▪ Solution Approach
▪ Define Solution Scope	▪ To define which new capabilities a project or iteration will deliver.	▪ Assumptions and Constraints ▪ Business Need ▪ Solution Approach ▪ Required Capabilities	▪ Solution Scope
▪ Define Business Case	▪ To determine if an organization can justify the investment required to deliver a proposed solution.	▪ Assumptions and Constraints ▪ Business Need ▪ Solution Scope ▪ Stakeholder Concerns	▪ Business Case

K. Requirements Analysis

The Requirements Analysis describes the tasks and techniques used by a business analyst to analyze stated requirements in order to define the required capabilities of a potential solution that will fulfill stakeholder needs. Requirements analysis may be performed to develop models of the current state of an organization. The tasks in this knowledge area apply to both stakeholder and solution requirements.

Table 4- The following table describes Requirements Analysis each task in detail

Tasks	Purpose	Inputs	Outputs
▪ Prioritize Requirements	▪ Prioritization of requirements ensures that analysis and implementation efforts focus on the most critical requirements.	▪ Business Case ▪ Business Need ▪ Requirements ▪ Requirements Management Plan ▪ Stakeholder List, Roles, and Responsibilities	Requirements [Prioritized]
▪ Organize Requirements	▪ The purpose of organizing requirements is to create a set of views of the requirements for the new business solution that are comprehensive, complete, consistent, and understood from all stakeholder perspectives	▪ Organizational Process Assets ▪ Requirements Solution Scope	▪ Requirements Structure
▪ Specify and Model Requirements	▪ To analyze expressed stakeholder desires and/or the current state	▪ Requirements Structure ▪ Requirement(stated)	Requirements [Analyzed]: Modeled and specified requirements are

	of the organization using a combination of textual statements, matrices, diagrams and formal models.		produced by this task.
▪ Define Assumptions and Constraints	▪ Identify factors other than requirements that may affect which solutions are viable	▪ Stakeholder Concerns	Assumptions and Constraints
▪ Verify Requirements	▪ Requirements verification ensures that requirements specifications and models meet the necessary standard of quality to allow them to be used effectively to guide further work.	▪ Requirements [Any Except Stated]	Requirements [Verified]
▪ Validate Requirements	▪ The purpose of requirements validation is to ensure that all requirements support the delivery of value to the business, fulfill its goals and	▪ Business Case ▪ Stakeholder, Solution, or Transition Requirements [Verified]	Requirements [Validated]:

	objectives, and meet a stakeholder need.		

L. Solution Assessment and Validation

The *Solution Assessment and Validation* Knowledge Area describes the tasks that are performed in order to ensure that solutions meet the business need and to facilitate their successful implementation. These activities may be performed to assess and validate business processes, organizational structures, outsourcing agreements, software applications, and any other component of the solution.

The main tasks that are performed in solution assessment and validation are:

1. Assess proposed solution
2. Allocate requirements
3. Assess organizational readiness
4. Define transition requirements
5. Validate solution
6. Evaluate solution performance

Table 5-The following table describes *Solution Assessment and Validation* each task in detail

Task	Purpose	Input	Output
▪ Assess proposed solution	▪ To assess proposed solutions in order to determine how	▪ Assumptions and constraints ▪ Requirements (prioritized and approved) ▪ Solution options	▪ Assessment of proposed solution

	closely they meet stakeholder and solution requirements		
▪ Allocate requirements	▪ Allocate stakeholder and solution requirements among solution components and releases in order to maximize the possible business value given the options and alternatives generated by the design team.	▪ Requirements (prioritized and approved) ▪ Solution(designed) ▪ Solution scope	▪ Requirements (Allocated)
▪ Assess organization readiness	▪ Assess whether the organization is ready to make effective use of a new solution.	▪ Enterprise architecture ▪ solution scope ▪ solution (designed) ▪ stakeholder concern	▪ Organizational Readiness Assessment
▪ Define transition requirements	▪ Define requirements for capabilities needed to transition from an existing solution to a	Organizational Readiness Assessment Requirements [Stated] Solution	▪ Transition Requirements

	new solution.	[Deployed] ▪ Solution [Designed]	
▪ Validate solution	▪ Validate that a solution meets the business need and determine the most appropriate response to identified defects.	▪ Solution [Constructed] ▪ Requirements ▪ [Prioritized and Validated]:	▪ Identified Defects
▪ Evaluate solution performanc e	▪ Evaluate functioning solutions to understand the value they deliver and identify opportunities for improvement.	▪ Business Requirements ▪ Identified Defects ▪ Solution Performance Metrics: ▪ Solution [Deployed]	▪ Solution Performance Assessment

M. Application Analysis Training

Business Analysis bridges the gap of business and Information Technology (IT). Business analysis helps project stakeholders to Understand the possibilities and constraints of IT and express their needs and wants. Business analysis helps developers recognize the right information to build solutions for business needs and understand users' business needs as per their culture and language.

Roles of Business Analysts : Application Designer, Business Architect, Data Architect, Training and Performance, Support Lead, Project Manager, Quality Manager, Service

Introduction Lead, Technical Architect, Technical Designer

Areas of Business Analysis: The three key include:

– Business

– System

– Customer

Business Analyst: The International Institute of Business Analysis (IIBA) defines a Business Analyst as someone who Works as a liaison among stakeholders to elicit, analyze, communicate, and validate requirements for changes to Business Processes, policies, and information systems.

Accenture Delivery Methods-

- ADM is Accenture's methodology for creating and delivering effective, consistent and lower cost client solutions. It provides a framework to utilize on client engagements.

Different component of ADS:-

- Accenture Delivery Methods
- Accenture Delivery Estimators
- Accenture Delivery Methods Procedures
- Accenture Delivery Tools
- Accenture Delivery Architectures
- Accenture Delivery Metrics

Business Analyst – Responsibilities as defined by ADM

– Analyze and design new Business Processes.

– Work with the stakeholders, business architect, and other planners to assess current capabilities and identify high-level requirements.

– Identify and define application requirements and use cases.

– Set up and maintain the Requirements Traceability Matrix.

Business Process Design

Business Process design describes the internal and external interaction points between the roles and application or system

Business Processes are referred to in two ways:-

As-Is Business Process- What a business does today

To-Be Business Process- What a business seeks to achieve in the future

SDLC Model

- SDLC models provide a structure for executing the activities needed for developing software systems.

A traditional SDLC model consists of the following phases

- Plan
- Analyze
- Design
- Built
- Test
- Deploy

SDLC Models

Following are some SDLC models that can be used during the analysis phase of a project:

Sequential Approach- Each phase has established sets of deliverables, deliverable dates, and reviews. Once a phase is completed, it is not revisited, and the deliverables of that phase are considered as final.

  - Waterfall Model -
  - Overlapping Waterfall Model-A phase is not always 100% complete before the next phase is started
  - V- Model- Extended waterfall model with emphasis on validation and verification.

- Incremental approach -The approach is to develop the software system incrementally.The software system can be broken down into sub-systems.
- Prototyping Approach- Overall objectives are defined for the software. Quick design occurs, which leads to creation of a prototype. Created prototype is evaluated by the user.

  Types of Prototyping:
  - Exploratory prototype (throw away)
  - Evolutionary prototype

- Iterative Approach-Iterative development mitigates risks by planning the work into a series of iterations.

  Example of Iterative is Spiral Model- The spiral lifecycle starts with planning, near the center of the model, and moves in a clockwise direction through the other quadrants

- Agile Approach- Built on the foundation of iterative approach. More adaptive to frequent changes. Usually adopted for time critical applications.

Requirements Definition:

– A condition or capability a user needs to solve a problem or achieve an objective.

– The functions a system is expected to perform and the level of performance desired from those functions.

They are divided into three main categories:

– Business

– Customer

– System

Writing Requirements: Guidelines

Concise, grammatically correct, use appropriately terminology, clear, understandable, complete,

Appropriately detailed, necessary, verifiable, consistent, modifiable, traceable, measurable

Goal-oriented, reviewed, compliant with template

Impact of Writing Bad Requirements

Lesser Time Spent on Requirements = Greater Project Cost Overruns

Requirements Gathering Techniques and Tools

- Techniques- Joint Application Design (JAD) Sessions, Focus Groups, Interviews, Scenario-Building or Visualization, Affinity, Analytic Hierarchy Process
- Tools: Process Flows, Use Cases, Diagramming, Prototypes

Requirements Modeling: The process of representing textual requirements in a specific, pre-defined, visual format. A representation of the components that is necessary to define a system.

Requirements models are used during requirements gathering and analysis:

- Business Analysts gather the client's business requirements before requirements modeling.
- Each model reflects an aspect of the requirements. Each model depends on the others; they are all interrelated.

What is Model

- Event Model- Defines the way a business uses data in response to Business Events
- Process Model- Defines the events to which a system must respond with appropriate system processes
- Data Model-Defines what information the system needs to accomplish goals.

Requirements Modeling Techniques

- Modeling Process
  - Process Decomposition and Definition
  - Data Flow Diagram
- Modeling Events
  - Use Cases
  - Interaction Diagrams
  - Activity Diagrams
- Modeling Data
  - Entity Relationship Diagram
- Modeling Time- Based Behavior
  - State Diagram

Prioritize Requirements: A requirement is typically a condition or capability needed by a user to solve a problem or achieve an objective.

Direction for prioritization can come from several sources:

a) Requirement Gathering
b) Validation Meetings
c) Imperatives List

Requirements Traceability: Ability to capture a requirement and then validate that it is

carried forward and implemented. It is one way of maintaining documentation.

Types of Traceability-

- Horizontal Traceability-To map all decomposed components of a work product
- Vertical Traceability-To map all work products to the requirements throughout the Software Development Life Cycle (SDLC).
- Forward Traceability-To map one work product to another one that it initiated
- Backward Traceability-To map a work product to other work products that initiated it.

.**High-Definition Lifecycle Scope:** The scope of HDLC is primarily focused on the Application, and Technical Architecture work stream, and introduces a new Test work stream.

Solution Planning: Solution Planning takes place during the 'sell' stage of a project. Accenture responds to a client proposal request by designing one or more solutions/options for the client to choose. Solution Planning will define the proposed solution and define a price for this solution to the client.

HDLC Plan includes:

- Transition Solution Planning
- Mobilize the offshore element of the project
- Finalize Solution Planning
- Plan and Mobilize
- Plan Change

The Transition Points: It is the logical point where deliverables are transitioned from one team to another. The main purposes of the transition points are to:

- Ensure the quality of deliverables
- Foster effective communication

Business Analyst Role in Transition Points:

1. Conducting the detailed walkthrough of deliverables
2. Setting up a meeting with relevant parties to communicate the handover of a transition point from one stage to another

Entry / Exit Criteria-

- HDLC Transition Points-Transition points are where deliverables are transitioned from one stage to another. Here, ensure that:

– All Exit criteria for the current phase are met.

– All Entry criteria are met before beginning the next phase.

– Current stage is considered complete.

– Follow the Process Flow for Confirm and Transition Application Analysis Deliverables at the end of each discipline.

Prototype

A software prototype is a partial or possible implementation of a proposed new product and is created during the Analyze phase of the Accenture Delivery Methods (ADM)

Purpose of Prototypes: Close gaps in understanding of requirements and place a mock-up of the new system in front of users

Prototypes are categorized as

- Low Fidelity (Low-Fi) -Represents the Graphical User Interface (GUI) for the final application.
- High Fidelity (Hi-Fi).- Consists of detailed final GUI design, Represents all screens and behaviors ,Matches look-and-feel of the colors, fonts, and images

Functional Prototypes: Uncovers functional requirements when the application implements complex interactions between users and automated processes.

Presentation Dynamics Workshop

The two day workshop was aimed to provide an overview and direct practice of effective presentation delivery skills. The primary focus of the workshop was on physical skills of delivery like:

- Managing nervousness
- Vocal quality
- Eye contact
- Use of arms and hands
- Moving strategically
- Using notes
- Using visual aids
- Handling questions and answers

It included videotaping of individual presentations and review by the participants and trainer and in site timely feedback was given.

The objective of this activity was:

- Identifying personal strengths and areas of development.
- Demonstrate effective physical presentation skills.
- Utilization of visual aids and notes effectively to enhance presentation success.
- Look and sound more confident and competent while delivering formal and informal presentations.

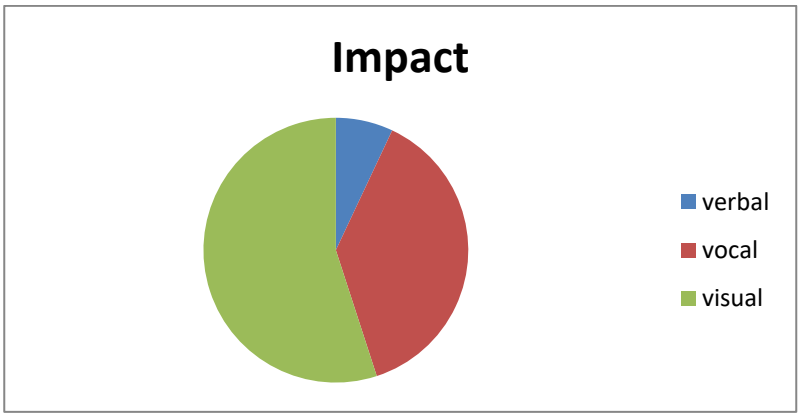
Significant learning points from this two days work shop are:

- Relative impacts of channel of delivery on the understanding of audience: out of all the components, visual aspect holds the strongest impact. The distribution is as follows:

Visual = 55%

Verbal = 7%

Vocal= 38%



Strategies for Managing Nervousı

- Before presentation:
  - ✓ Know your content, audience and venue well.
  - ✓ Memorize the first two minutes.
  - ✓ Analyze what you are afraid of.
  - ✓ Watch what you eat and drink.
  - ✓ Meet and greet audience.
  - ✓ Try some relaxation exercises.
  - ✓ Visualize success.
- During the presentation:

To turn your nervous energy to positive energy:

- ✓ increase your volume
- ✓ use larger gestures
- ✓ avoid magnifying any shakes
- ✓ use notes
- ✓ pause and breathe
- ✓ find a friendly face in the crowd.

Organizing an informative presentation:

- Introduction: get their attention (what is in it for them WIIFT)
  - Establish your credibility
  - Preview your main points
- Body: deliver three main points
- Conclusion: summarize your message
  - Close with conviction

Vocal characteristics of the presenter:

The presenter should give special emphasis on projection, pitch, pace and pause. He should know how to use and modulate these criteria to communicate effectively.

Visual characteristics of a presenter:

1. Eye contact
2. Hands and arm gestures
3. Placement and movement of the feet.

Effective use of notes:

- Prepare notes on index cards
- Number the cards
- Practice using your notes
- Pause while looking at the notes, then reestablish eye contact before continuing.
- Beware of fidgeting with the notes.
- Hold your notes with pride.
- Do not apologize for them.

Effective use of visual aids:

- Keep them simple.
- Use color transition first, then show the visual.
- Introduce what the visual shows.

- Check your equipment.
- Practice using your visuals.

Methods to handle questions from the audience:

Strategy of 5 D's:

1. Delay: postpone the reply by using a relevant reason so that you get time to get your facts right and look for a valid explanation.
2. Detour: turn around the context of the question but still satisfy the query.
3. Dismiss: it should be used on irrelevant questions or questions that are not important to the present ongoing presentation but make sure of not offending the person.
4. Deflect: throw back the question to the person who asked it or someone in the audience. However, don't try this if you don't know the answer. It is meant only to give you a little time to recollect the answer.
5. Diffuse: used to avoid complex discussion amongst audience on debatable issues which are not directly related to the context of the presentation.

N. Online Trainings

Creating Diagrams with Visio 2003

This online training course describes how to use Visio to create diagrams that illustrate data in forms of charts, tables, graphs, diagrams and technical drawing.

MS Office 2003: Developing Diagrams with Visio 2003

This online training course describes Working with text which includes adding text in Visio 2003 diagram and creating tables. Customizing Diagrams includes positioning and formatting shapes, work with pages, adding pages; use of custom shapes, stencils, and templates and creating custom stencils and templates.

Microsoft Office 2003: Visio for Beginners: Visio 2003 and Other Programs

Visio 2003 and Other Programs link Visio 2003 diagrams to Office applications and export Visio shapes as graphics, embed Visio shapes and diagrams in Office documents, link to and

embed Visio diagrams in other Office documents, use data from other programs in Visio 2003 diagrams.

bring data from other programs into a Visio diagram, share and protect Visio 2003 diagrams, share Visio drawing files while protecting the originals, You can apply this training to any type of communication: presentations, meetings and conference calls, memos, and emails.

Microsoft Office Visio 2007 Beginning Visio: Creating Visio 2007 diagrams

Microsoft Visio 2007 is powerful diagramming software that enables us to create different types of diagrams and work environments. This course showed how Visio 2007 has predefined templates and stencils that enable us to create diagrams quickly and efficiently; along with the Visio Help features that allow us to tap into the vast knowledge base both within the help files and online through the Microsoft knowledge base. Once the diagrams have been created, this course demonstrated how to manipulate the shapes and connectors before saving and printing them.

Beginning Visio: Collaborating and Using Visio 2007 with Other Programs

Visio 2007 is a powerful collaboration tool that allows the user to show content from other applications and also allows content in Visio to be linked to other types of files. This course showed how to link, embed, import and export content and drawings in order to allow for collaboration with other programs while using Visio 2007.

Requirement Analysis Modeling: Event and Process model basis

Requirement analysis models Include data model, Event model and process Model. Event Model Contains Context diagram, Event stimulus, Event response DFD, and Event table. Process model contains data store definitions, data flow definitions, elementary process prescriptions.

Requirements Analysis Modeling: Data and Process Model Basics

Data model consist of attribute type description ,entity type descriptions, relationship type descriptions and ER Diagram. .Process model contains data store definitions, data flow definitions, elementary process prescriptions.

Requirements Analysis Modeling: Advanced Modeling Techniques

Advanced Modeling Techniques focuses on advanced modeling techniques, specifically, how to normalize data in the data model, what to do if it is unclear which attributes describe which entity, and how to document significant changes in the properties of an entity type in response to events

Requirements Analysis Modeling: Reference Guide

Requirement Analysis Modeling (RAM) Reference Guide contains conceptual information about every aspect within requirements analysis modeling. It acted as an on-the-job reference tool for requirements analysis concepts and deliverables.

Requirements Development and Management

This course helped realize the many benefits associated with effective requirements development and management. In it we learnt about all of the main steps, processes and sub-processes associated with developing and managing requirements.

Requirements Analysis Tool Training

This is an online training that helped user of Requirement Analysis Tool (RAT) analyze requirements and take action from the various issue reports generated by RAT. RAT will help BA's in the process of analysis requirements as:

• Capture ambiguous requirements
• Capture missing requirements
• Generate functional diagrams
• Quantify the quality of the requirements.
• Overview of Requirements Analysis Tool.

Requirements Analysis Modeling: Supporting New Customer Requests

This training focused on what would happen if a client requests new functionality for a system. It helped understand how to integrate new functionality into an existing system.

Accenture Delivery Suite (ADS) Overview

The ADS Overview is targeted for new users of the Accenture Delivery Suite (ADS) or any ADS component - Accenture Delivery Methods (ADM), Accenture Delivery Tools (ADT), Accenture Delivery Architectures (ADA), and Accenture Delivery Metrics (AD Metrics). This course also provided an overview of the ADS Solutions: ADS Accelerators, ADS Practices,

and ADS for offerings.

The Effective Business Meeting: Planning an Effective Business Meeting

This course presented with information that will help improve the quality of our meetings. It helped develop strategies necessary for preparing effective business meetings, by carefully considering the importance of all the components of the meeting, including people, place, purpose, time, agenda, and atmosphere.

The Effective Business Meeting: Leading an Effective Business Meeting

This course taught how to make meetings more successful by providing the tools and information that is necessary to lead an effective meeting.

Writing Effective E-Mail Messages:

This online training describes Planning your e-mail messages, rules of writing email messages Tips for writing email messages, Writing Terrific Leads –in Writing High impact E-mails.

Managing and Leading Virtual teams: Collaboration in virtual Teams:

This online training describes collaboration in virtual world, trust and commitment in virtual teams, flexible collaboration in virtual teams and process thinking.

Software Engineering Fundamentals: Accenture Delivery Methods - Experience Hires

The goals of this course are to: • Explain the Accenture Delivery Methodology components and how they are used • Enable learner to champion ADM, by understanding ADM vision and relationship between methods, processes, activities, tasks, tools, architecture assets and library repository.

Communicate For Results

This is computer-based training course that teaches you a framework for structuring results-focused communications.

- Prepare communications that focus on the results they want to achieve
- Assess the audience to see if there is alignment with the communication goal
- Create a communication plan that will help move listeners toward the desired outcome.

Participating in a Project Team: Participating in a Project Team Simulation:

Running a successful meeting setting SMART goals demonstrating the attributes of a team leader finding ways to keep professionally adept demonstrating mediation skills avoiding conflict pitfalls recognizing team-strengtheners recognizing team-subverters asserting your opinions encouraging people to talk avoiding the pitfalls of group discussion managing communication distortions.

Building and Maintaining Industry Skills-

With the move to the new operating model, the importance has increased even more. This module will increase your awareness of the progress we've made around the industry framework—a framework that helps us enables people to build the industry skills they need. Making Your Time Count: Managing Your Time

This training helped us to enhance our performance and contribution in the workplace by acquiring expertise in time management skills.It helps us in knowing variety of strategies, techniques, and tools used to better utilize the time available to the individual in the workplace

Professionalism and Business Etiquette: Communication Business Etiquette

Business Etiquette help us to know how to communicate--in person, over the phone, electronically, and with customers. The Course helped us to recognize benefits of knowing functional communication etiquette, writing etiquette, match types of writing tools to appropriate circumstances, telephone etiquette, identify key aspects of proper telephone etiquette and applying Telephone Etiquette

Part -2

Dissertation

On

"Market Research for Business Opportunities for ACCENTURE in China's IT Healthcare Industry"

Executive Summery

China continues to face great challenges in meeting the health needs of its large population. The challenges are not just lack of resources, but also how to use existing resources more efficiently, more effectively, and more equitably. Even though the public health care system is constantly trying to adapt to population needs and improve its performance, there are many problems in the system, such as limited access, low efficiency, poor quality, cost inflation, and low patient satisfaction. Currently, private hospitals are relatively rare, and private health care as an important component of the health care system in China has received little policy attention Now a major unaddressed challenge facing China is how to reform an inefficient, poorly organized health care delivery system and the only solution for the existing problem is the development of well integrated e- Health system. There is a continued influence of the international players on China's Healthcare IT Market were domestic players also exiting playing a bigger role and some other acting in niche.

The objective of this study is to analyze the opportunities for Accenture in tapping the untapped market of China's IT healthcare.

This study is based on an extensive literature review, the purpose of which was to identify, summarize, and evaluate ideas and information on the opportunities for Accenture in tapping the untapped market of China's IT healthcareIn addition, the study uses secondary data analysis and the results of previous study by the authors to highlight the current situation of IT healthcare in China's market. Also researches done by Accenture on various segments in China has been used for analysis.

This study found that government-owned hospitals form the backbone of the health care system and also account for most health care service provision which have low utilization rate. Although 80% of the hospitals have a well established HIS system but it still lacks other e- Health services. like CIS, m –Health,EMR, Cloud Computing, Telemedicine. Only 30% of the population is covered under insurance. There is a vast opportunities for the IT provider to offers service in China's Healthcare market. The report highlights the role and the offerings of the domestic and the international players. The report also analyses the opportunities for Accenture in China's

Helathcare Market. Through SWOT and Porters the recommendations are drawn for Accenture for making a firm position in China's Healthcare market.

Chapter 1: Introduction

1.1 Objective of the Study:-

General objective:-

- To analyze the healthcare, hospital and Health Insurance system in China
- To analyze the untapped market of China's IT Healthcare.
- To study the strengths, weaknesses, opportunities and challenges for Accenture in China's IT Healthcare industry

1.2 Rational for the study

China's e- Health has a vast untapped market. The Health Information Technology (HIT) industry of China has passed the embryo phase (compared with other industry, the development of Health computerization in China is slow and it will take a relatively long time to enter the maturity phase) and is in initial part of the growth phase. The Market demand is high, application software thriving and the IT service market rapidly growing. The HIT industry spearheaded by the increasing demand for regional health information system will grow faster and will have a bright future as the economic power of china keeps growing. There is a vast demand for high quality of e- Health technologies in the market where the domestic players lacks in and the credit is taken by the foreign players like IBM, CISCO were Accenture presence is still unknown as compared to them. Market analysis is needed to understand the untapped needs and what are the new upcoming market were Accenture can prove its excellence.

1.2.1Profile of China

Currently China is the country with the biggest population in the world, with estimated 1.341 billion people in 2010, according to the IMF database. Although the population is expected to increase, but the speed of increasing is getting lower due to the low natural birth rate in China. The natural increase rate of China population experienced a decreasing in the previous decades, from 11.87 ‰ in 1980 and down to 5.05‰ in 2009 it is due to China family planning program named 'One Child Policy' which aims to control the population. 47 % of the population lives in

urban area.The Birth and the Death rate are Birth rate12.29 births/1,000 population (2011 est.) and 7.03 deaths/1,000 population (July 2011 est.) respectively.

According to the latest data from the International Monetary Fund (IMF), during the last five years in China, the GDP is estimated to reach 5.75 trillion US dollars in 2010 compared with 2.71 trillion in 2006. It is also estimated that in 2015 the GDP of China would reach 9.98 trillion U.S. dollars. The China GDP per capital experienced a high speed growth in the last five years, from $2,064 in 2006 to estimated $4283 in 2010. And the GDP per capita of China would reach 7,258 U.S. dollars.

There are in 22 provinces, regions and municipalities. They are Beijing, Hebei Province, Liaoning Province, Heilongjiang Province, Shanghai, Jiangsu Province, Zhejiang Province, Anhui Province, Fujian Province, Jiangxi Province, Shandong Province, Henan Province, Hubei Province, Hunan Province, Guangdong Province, Guangxi Zhuang Autonomous Region, Sichuan Province, Guizhou Province, Shaanxi Province, Qinghai Province and Xinjiang Uygur Autonomous Region. In addition, the systems must follow the guidance of Electronic Medical Record System Function Specification issued on 1 January 2011 by the Ministry of Health of the PRC[25]

1.2.2 Disease Pattern

Global burden-of-disease estimates produced by WHO indicate that 80% of deaths in China are due to non communicable diseases and injuries. The share of deaths made up by NCD increased from 53% to 85% during the period of 1973 to 2009. According to the findings of the Third National Death Survey, the top four causes of death were cerebro vascular diseases, cancer, respiratory system diseases and heart diseases, and the mortality rate for NCD has reached 503/100 000. Cerebrovascular diseases, malignant neoplasms and heartdiseases account for more than 50% of all deaths.1 The rankings based on disability-adjusted life years (DALYs) also highlight the emergence of non communicable chronic diseases and injuries as the predominant health conditions. Much of the disability and death attributable to chronic diseases, particularly among working-age adults, could be reduced through a reduction in risk factors, including improvements in the quality of air, water and sanitation; reductions in tobacco and alcohol use; improvements in diet and nutrition; and increases in exercise. It is projected that disabilities and deaths related to chronic diseases will result in a US$ 550 billion loss in productivity between

2005 and 2015. In addition to the longstanding challenges of curtailing infectious disease, this double burden of disease places enormous strains on the resource-deficient health system.3 The disease burden varies by age group. It is estimated that 70% of deaths among children less than five years of age are attributable to maternal, perinatal or nutritional conditions, including sepsis, pneumonia, diarrhoea, measles and tetanus, many of which could be addressed through high quality health care. Among children aged five to 14 years, the number of deaths is a very small part of the total disease burden; however, most of these deaths are attributable to injuries and accidents, including drowning and road accidents. For those between the ages of five and 44 years, injuries and violence account for an even larger share of deaths, at over 50%. Some 69% of disabilities and 80% of deaths among adults and older people are due to NCD, which account for two out of three deaths each year. Four-fifths of these deaths are in low-income and middle-income counties, and one third are in people younger than 60 years.

Among the remaining infectious diseases, hepatitis B, tuberculosis and lower respiratory infections still account for significant mortality and lost DALYs, particularly among children. While infectious diseases attract enormous interest both domestically and internationally, injuries and violence contribute about 11% of total mortality each year, compared with 8.6% attributed to infectious diseases. In 2007, most injury deaths were attributed to suicide (28%), road traffic accidents (25%) and drowning (11%), with the suicide rate for women estimated to be 25% higher than that for men, and traffic injury mortality rates twice as high for males as females.5 Mental and neurological disorders are responsible for about 20% of the overall disease burden in China. More than 30 million children and adolescents under 17 years of age have behavioral and emotional problems, of which about 50%- 70% need mental health services but remain untreated.[1][2]

The Life Expectancy is Extending in China

According to the United Nation forecast, the life expectancy in China could still rise but at a relatively slower speed than the previous decades in the coming 40 years; and will almost hit 80 in 2050.With lower birth rate and extended life expectancy in China, it is widely believed that China is stepping into an aged society.

The Aged Population in China is increasing at a Noticeable Speed

According to the international standard, a country with either 10%+ of population over 60 or 7%+ of population over 65 would be considered as an aging country. According to the National Bureau of Statistics of China, China stepped into an aging country with 7% of population over 65 years old in 2000, and this percentage has been continuously rising.

In 2020, it is estimated that 11.61% of China total population could be people with over 65 years old. Normally, an aging society could lead to an increase in needs for medical services which could boost the healthcare industry. When people get old, they are normally fragile to diseases, and old people consume more drugs than younger. [3]

1.3 Budget Healthcare and Technology 2011

- 172.758 billion yuan have been appropriated for medical and healthcare spending, an increase of 16.3%. This will complete the three-year investment plan for healthcare reform and pharmaceuticals that began in 2009, totaling 448.614 billion yuan ($70 billion).
- The budget also increases spending for science and technology by 12.5% to 194.413 yuan billion, of which 99.063 billion Yuan is to support research in cutting-edge technologies.

The strategic emerging initiative of next-generation IT falls in the communications sector, as well as the manufacturing sub industry of IT hardware for the manufacturing of equipment such as telecom equipment and mobile network equipment. The key initiatives involved in the plan are IT network infrastructure, next-generation mobile communication, next-generation Internet core equipment, smart terminal, three network convergence, IOT, cloud computing, integrated circuit, new display, and high-end software and servers.

As per the China Electronic Information Industry Development Institute, China's IoT market will reach 750 billion yuan, which will overrun the PC, Internet or mobile communications market. This initiative is targeting to promote China's own IoT ecosystem, including sensors, chips, software, terminals, infrastructure, network and applications. Cloud computing is another key initiative promoted by the government. It will focus on the construction and operation of Internet data centers. The operators and equipment vendors need to get a four-level certification from the government. The level is based on the Internet data center's capacity, security and user experience. This strategic area also includes the manufacturing of IC and panel display products.

China's Five-Year Plan promotes enterprises to adopt new technologies and IT equipment to bring market competitiveness including in areas such as R&D, design, automation, PLM and quality management solutions. Thus the areas of IT investment include hardware, software, IT services and solution areas such as PLM systems. Gartner forecasts the investments on IT to reach 266 billion Yuan by 2015, growing at a CAGR of 11.4%[3]

1.3.1 China's Healthcare Expenditure

Due to Urbanization, environmental pollution, and wealth disparities have led to widespread health problems including a significant rise in chronic diseases. In response to these rapidly emerging challenges, China has upgraded its healthcare services and expanded its health expenditures.

During the years of 2006-2010, The Total Annual Healthcare Expenditure in China experienced a high speed increase, at a CAGR of 18.72%. The total Health expenditure of China as of 2011 was $355.26. During the 12th Five Year Plan (2011-2015), the governments will strength its investment in healthcare services in the coming years and it is expected that the total annual healthcare expenditure would continue to grow at least at the same rate of the past five years. Based on this expectation, in 2015, the total annual healthcare expenditure in China is estimated to reach $705.74 billion

Because of rapidly increasing health expenditures, China's health insurance system has rapidly expanded and gradually increased its contributions to health expenditures. However, individuals still bear the greatest portion of healthcare costs. In 2009, individuals accounted for over 38% of expenditures, although this rate had been steadily falling since 2000, when out-of-pocket expenses reached nearly 60% of the total.[3]

Figure1: Healthcare spending in CHINA

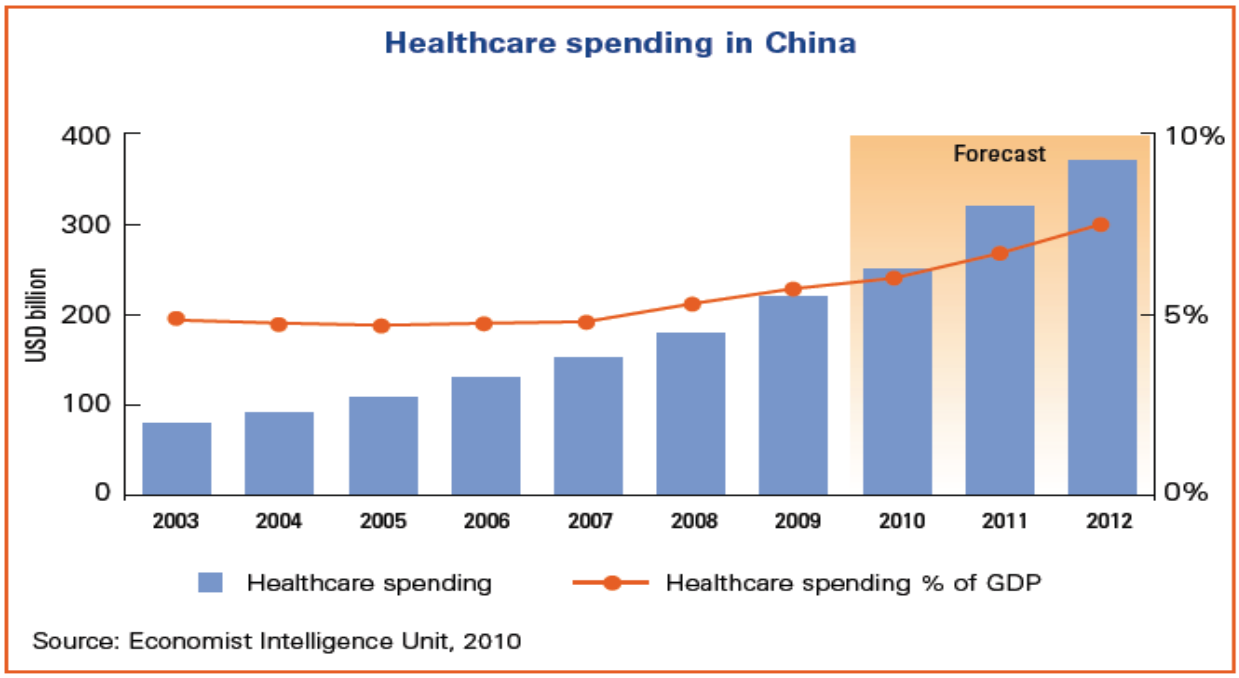
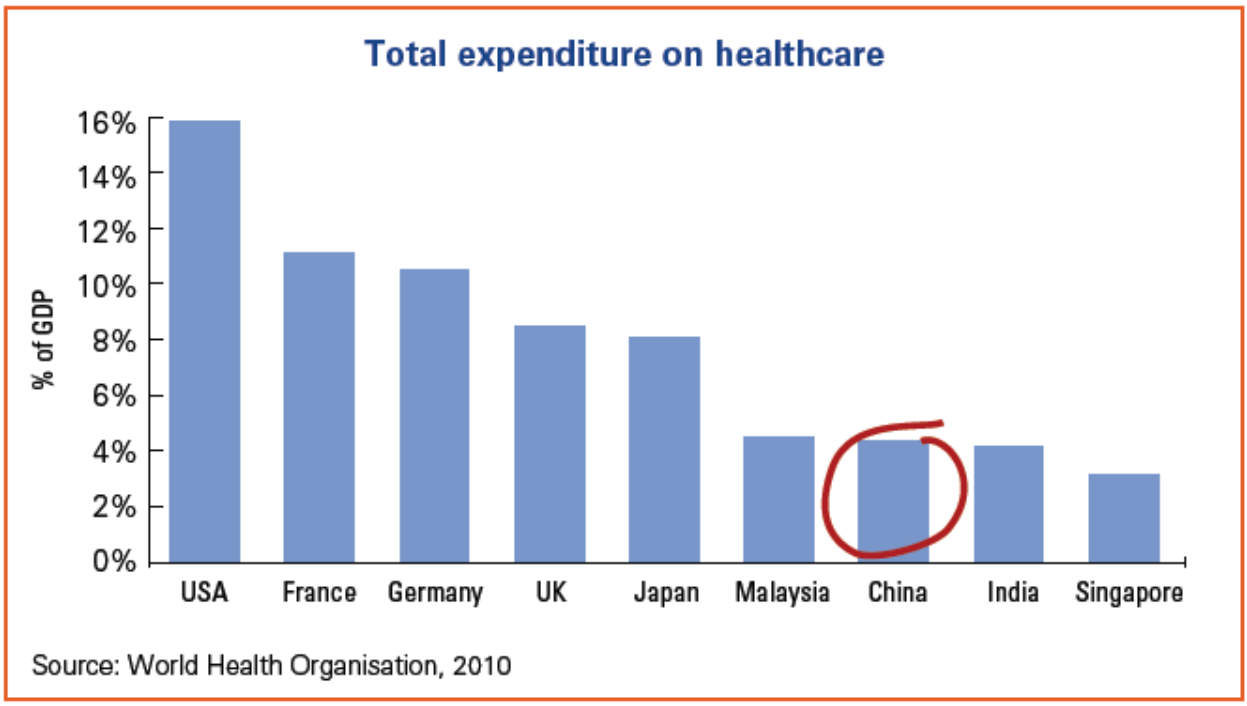


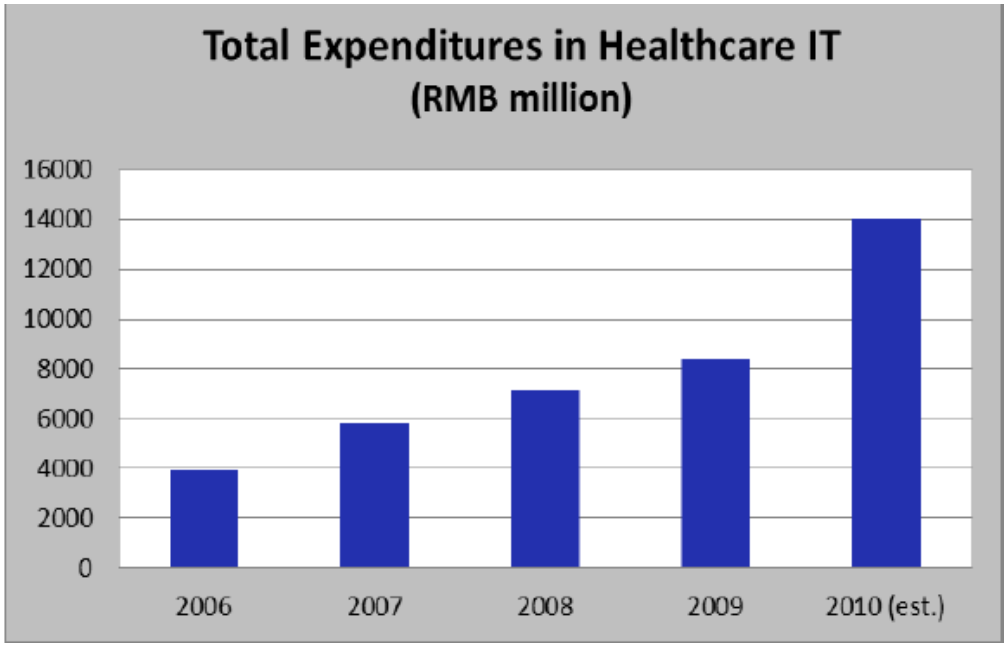
Figure 2: Comparison of Healthcare Spending in China against the developed nations



1.3.2 China's Healthcare IT market

China's healthcare IT expenditures reached RMB 8.42 billion (USD 1.26 billion) in 2009, recording a 17.5% growth from 2008. The sector is expected to continue its rapid expansion, jumping to an estimated RMB 14 billion (USD 2 billion) for 2010. The total Health IT expenditure of China as of 2011 was $2.46 billion. By 2015, the number will grow to RMB 40 billion (USD 6 billion), with an estimated compound annual growth rate (CAGR) of 25%.[3]

Figure 3: Increase in Healthcare spending from 2006 -2010



Source: National Bureau of Statistics, China Statistical Yearbook 2011

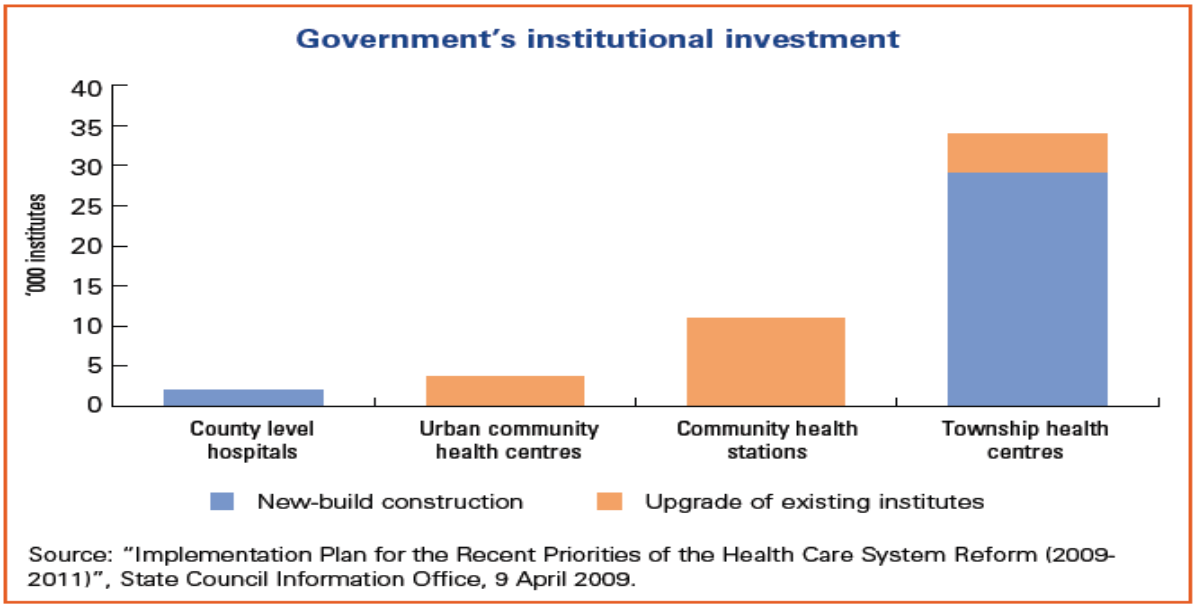
1.3.3 Reforms in China (Formed by Ministry of Health) China

From April 2009 to July 2009, China's State Council and Ministry of Health announced guidelines for expanding its ongoing reform of the country's healthcare system. The government announced that it would invest $124.1 billion on improving healthcare industries during 2009-2011. This effort is occurring outside of allocations set by the $583.9 billion package. Previously, the government had allocated only about $4.4 billion for healthcare.

The main investments include:

- Building 986 new hospitals at a county level, 3,549 hospitals at a town level and 1,154 community health service centers at the city level.

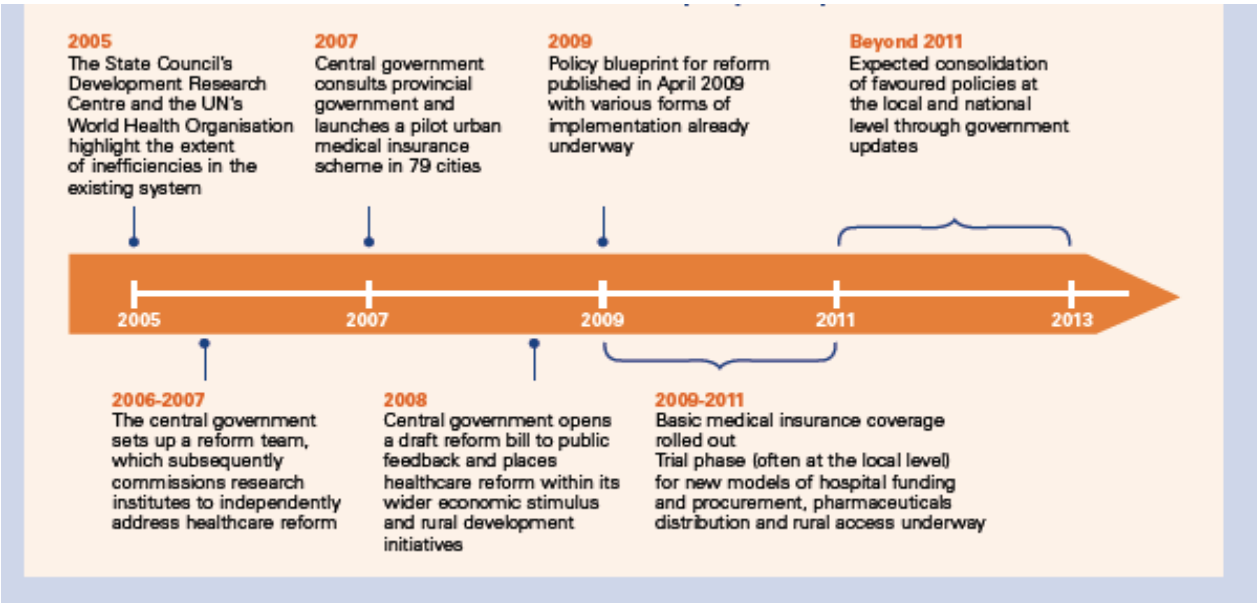
Figure 4: Government investment plan in China



- Using IT technologies to create closer partnerships and communications among more than 900 third-class hospitals (the best hospitals are classed at Tier 1) and more than 2,000 county-level hospitals.
- Implementing an experimental, standardized electronic medical record system that will initially be used by 50 hospitals.
- Building nationwide unified interconnection between medical recording systems and social insurance systems. Impact on IT Spending: Gartner estimated that the plan will invest $4.4 billion in building up or optimizing key IT systems and medical diagnosis and treatment equipment from 2009 through 2010. This effort included:
- Standardizing electronic medical reports for patients throughout China, establishing networking between hospitals and a consolidating the social security system.
- Building 5,689 new hospitals on different levels.
- Improving disease control by implementing a well-structured public healthcare information system based on data forecast analysis.

- Improving the hospital management system by setting up digitized hospitals that use clinical diagnosis and management systems.[27]
- The plan also includes an increase in subsidies for urban residents medical insurance and rural cooperatives medical insurance which now stands RMB 120 per head, compared withRMB40 IN 2007[29]

Figure 5: Timeline for Healthcare Reform policy development

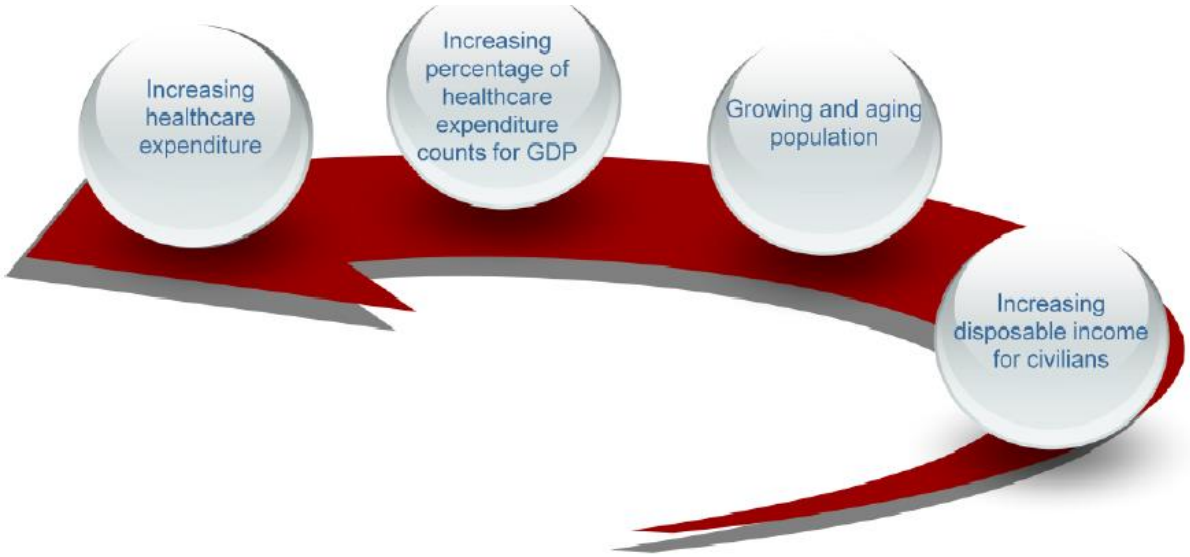


Source:- The changing face of Healthcare in China,:KPMG,2011

Hardware: Hardware purchases from the healthcare sector in China traditionally have been weak; thus, the impact on demand will likely be low to moderate. However, the PC and server market segments would be benefited more, as more than 6,000 hospitals is setting up during 2009 to 2011. It was estimated that 10% of IT spending in this sector would occur on hardware products, such as PCs, servers, printers, and other peripherals, such as PDAs.

Software: The software market segment will benefit from spending on basic operating systems, customized software products for hospital management systems and public healthcare information systems. It was estimated that 20% of IT spending will represent investments in software products and licenses.[3]

Figure 6: Drivers of Change



Source:- Fixing the public hospital System in China, The world Bank;2010

1.3.4 Vision of China Government 2020

Chinese's Government has ambitious plans to achieve equal access to public healthcare for all its citizens by 2020. Those that wish to pay more for a more personalized service can still opt for private sector coverage, but public backed medical insurance will once again offer 'cradle to grave' support'. This will not only mean a decade of change throughout public and private healthcare institutions, but healthcare's supporting industries, from pharmaceutical to equipment manufacturers, are also set for a period of major restructuring.

In the short term, the first phase of plans that run from 2008 up to2011 is quite clear. Three interrelated 2011 priorities are to extended basic medical insurance coverage to over 90% of urban and rural residents improve accessibility and services and pharmaceutical for end-users.

These objectives are backed by the construction/upgrade of 3,700 community hospitals and clinics, and 11,000 village clinics, so that by 2011 each county has at least one standard hospital and every village has its own clinics. Government sponsored training will increase the supply of

trained staff, especially in rural areas. In addition, the government is seeking to promote price-competitive generic medicines, consolidated pharmaceutical distribution channels, and control the price of medicines by insurances. [26]

The government has a major healthcare improvement plan

- By 2020 a healthcare system that is effective and affordable for all citizens in both urban and rural areas
- Extra expenditure of CNY850 billion (about £80 billion)
- Expand the use of medical insurance to at least 90% of the population
- Improve nationwide access to basic medicine
- Eliminate the inequality of supply
- Improve primary-level medical care particularly at county, township and village levels
- Improve administration, operation and supervision of hospitals [27]

1.4 Hospitals and health service centers

MOH(Ministry of Health) classifies hospitals into three classes. These three classes of hospitals have different capabilities in terms of medical professionals, instruments, and facilities. There are approximately 30000 hospitals in China.

Class 1 hospitals

Class 1 hospitals provide medical service to specific areas, usually covering less than 100,000 in population. They provide medical service, vaccination, recovery service, and so on. These are institutions that secure equal service to all citizens. Class 1 hospitals can be established both in large cities and in smaller county-level cities, even in some towns.

Class 2 hospitals

Class 2 hospitals provide service to large areas, usually serving more than 100,000 population. They have the capacity to provide more advanced and specialized medical service. Class 2 hospitals can be in large cities and in-county cities.

Class 3 hospitals

Class 3 hospitals have advanced facilities and senior professionals. They usually provide services to entire provinces or to the country as a whole. Besides providing medical service, they also undertake training, education, and research and development (R&D) work. They usually are located in large cities.[25]

Health service centers

Health service centers are clinic offices, which provide services to specific area residents. They have fewer instruments and professionals, and have no advanced facilities. They can only provide basic medical service.[26]

Figure 6: Organizational structure of Heath Care System in China

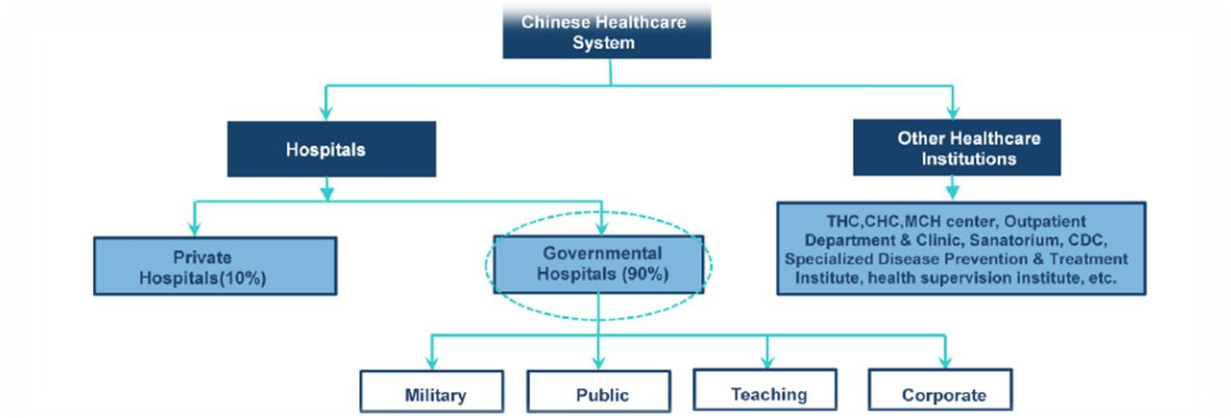
	Health services provided	Current situation
Tertiary hospitals (Larger, Tier 3)	• Provide specialist services although typically provide wide range of health services	• Revenue/cash is not an issue • Goal to improve quality of care and hospital efficiency • Desire to become regional/ international center of excellence
Secondary hospitals (Often regional)	• Provide general health services • Treat mostly outpatients	• Revenue/cash flow major concern • Often lack of good medical infrastructure • Difficulty in attracting high quality personnel • Weak hospital management skills
Primary hospital (Often small community health centers)	• Provide community health services	• Major survival challenge as difficulty in attracting patients and generating required revenue to cover operating costs
Special service hospitals	• Provide specialized treatments (e.g. cosmetic surgery)	• Revenue generated from personal expenditures • Target specific populations (e.g. foreigners, wealthy populations)

Source:- IBM Healthcare;2010

Public Health Service & Public Hospital

In China, the healthcare services are mainly based on government managed public hospitals. Currently in China, 90% of total hospitals are public hospitals which are under the MoH, (Ministry of Health) provincial health bureau, or municipal health bureau, the rest are private hospitals[26]

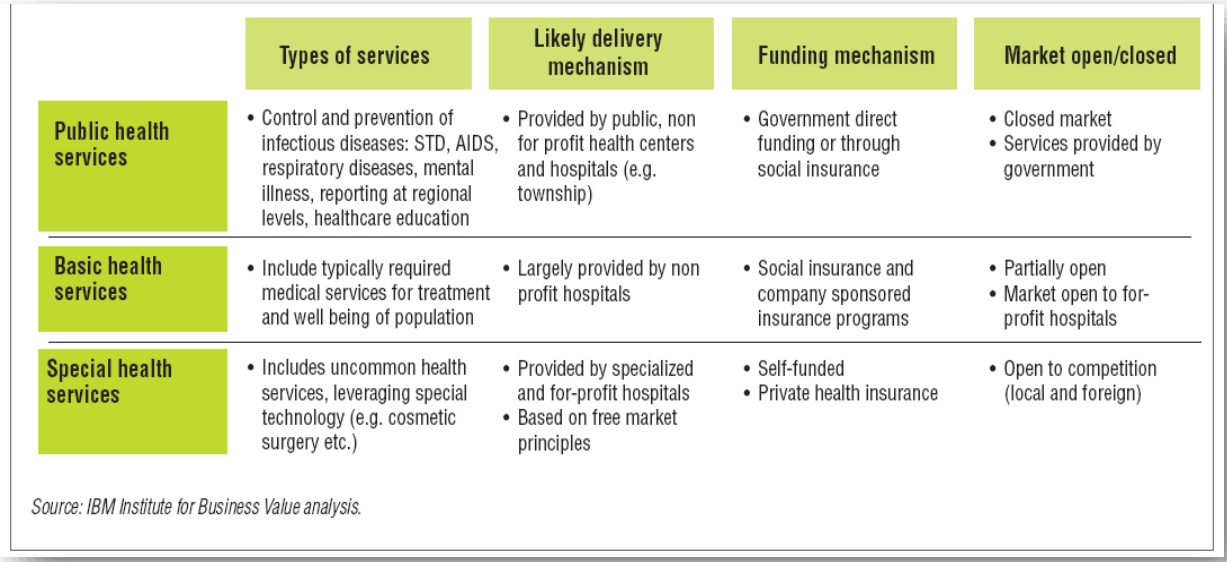
Figure 8: Categorization of various Hospital system in China



Source:- IBM Healthcare;2010

The government encourages the development of private hospitals and clinics. However, the process is very slow. Government-owned hospitals form the backbone of the health care system and also account for most health care service provision. However, even though the public health care system is constantly trying to adapt to population needs and improve its performance, there are many problems in the system, such as limited access, low efficiency, poor quality, cost inflation, and low patient satisfaction. Currently, private hospitals are relatively rare, and private health care as an important component of the health care system in China has received little policy attention. Currently the Hospital bed density is 4.06 beds/1,000 population (2009)[28]

Figure 9: Delivery and funding mechanism for different healthcare services

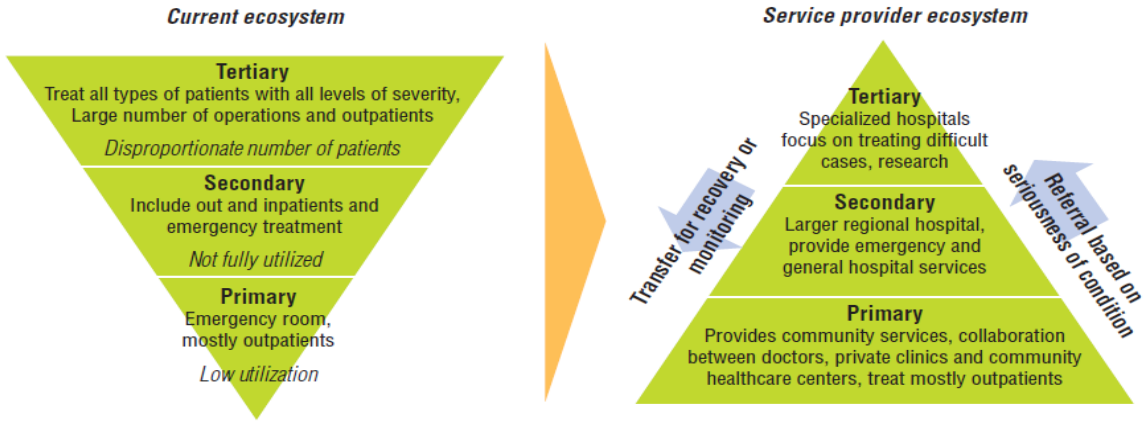


	Types of services	Likely delivery mechanism	Funding mechanism	Market open/closed
Public health services	• Control and prevention of infectious diseases: STD, AIDS, respiratory diseases, mental illness, reporting at regional levels, healthcare education	• Provided by public, non for profit health centers and hospitals (e.g. township)	• Government direct funding or through social insurance	• Closed market • Services provided by government
Basic health services	• Include typically required medical services for treatment and well being of population	• Largely provided by non profit hospitals	• Social insurance and company sponsored insurance programs	• Partially open • Market open to for-profit hospitals
Special health services	• Includes uncommon health services, leveraging special technology (e.g. cosmetic surgery etc.)	• Provided by specialized and for-profit hospitals • Based on free market principles	• Self-funded • Private health insurance	• Open to competition (local and foreign)

Source: IBM Institute for Business Value analysis.

Source:- IBM Healthcare;2010

Figure 9: Inefficiency in the Current System of Hospitals in China



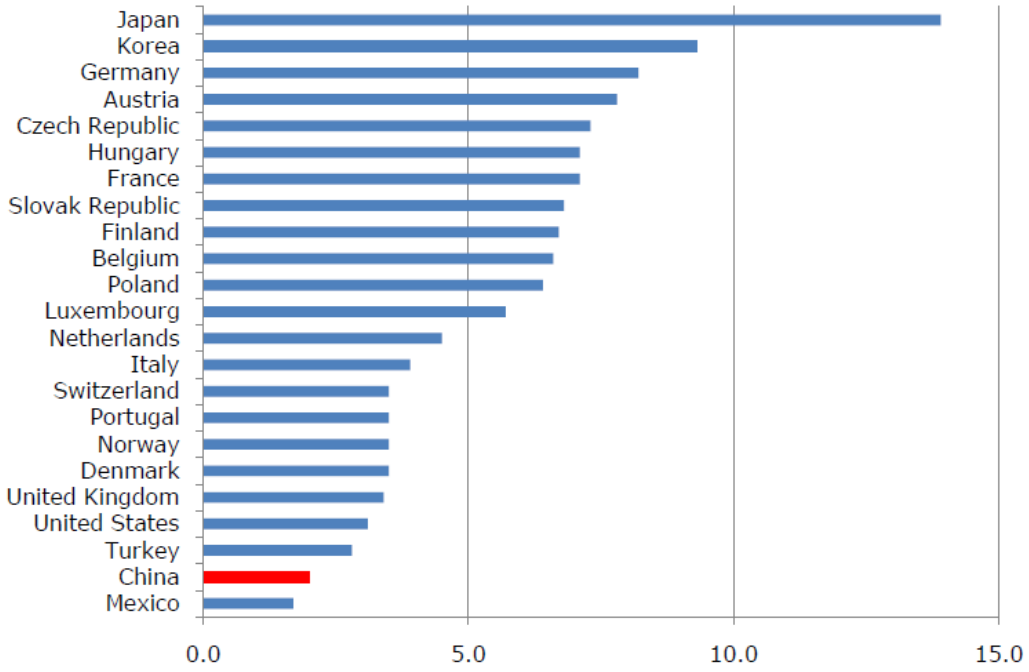
Source:- IBM Healthcare;2010

Figure 10: Number of Beds per 1000 Population, by Year and Type of Institution

	Hospitals	Nursing homes	Health centers	Community health service centers	Maternal and child care stations	Specialty diseases centers	Others
1960	0.89	0.16	0.09	0.00	0.01	0.03	0.31
1970	0.85	0.06	5.36	0.00	0.01	0.00	0.16
1980	1.21	0.07	0.97	0.00	0.02	0.03	0.10
1990	1.63	0.11	0.86	0.00	0.04	0.03	0.12
2000	1.71	0.08	0.92	0.00	0.06	0.02	0.06
2008	2.17	0.03	1.20	0.16	0.09	0.02	0.01

Source: Ministry of Health, China National Health Yearbook 2009.

Figure 11: Beds per 1000 Population, China and Selected OECD Countries



Source: Ministry of Health, China National Yearbook, 2009

Challenges Facing Current Healthcare System

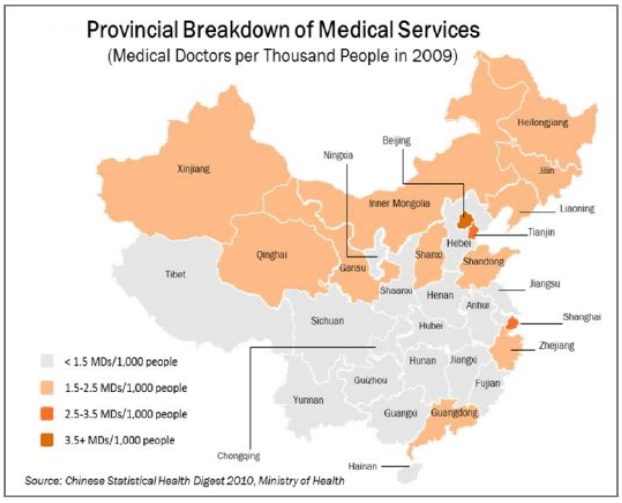
Implementing health reform first requires a thorough and comprehensive view of the current issues with the healthcare sector today. Identifying problems can set the blueprint for changes to be made in the future. There are three main challenges:

- The lack of access to affordable healthcare
- Inefficient use of healthcare resources
- A lack of high-quality patient care.

Geographic distribution on various hospitals in China

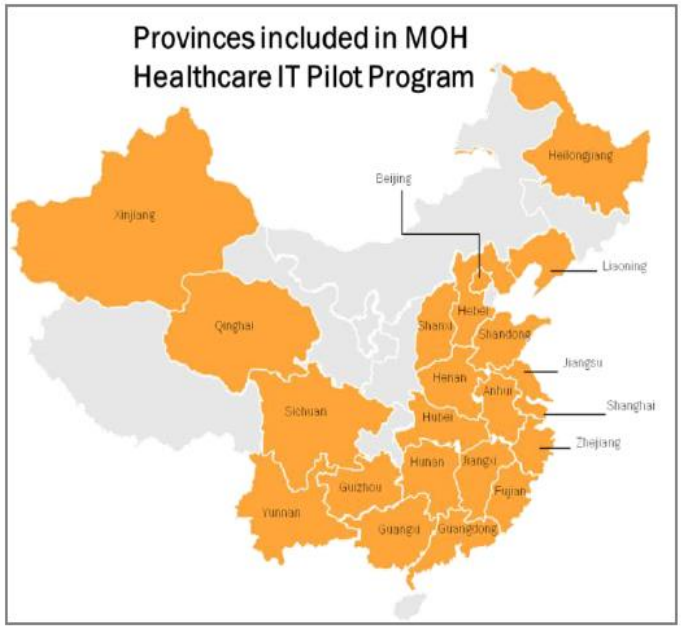
Due to the current distribution of China‘s healthcare services, the market opportunities for both medical devices and healthcare IT have strong regional considerations. Significant disparity exists in China‘s healthcare capabilities, with certain provinces possessing world-class capabilities and other regions lacking even basic care for much of its inhabitants. The graphic below showcases this disparity by showing the relative availability of medical doctors. As the map demonstrates, city centers such as Beijing, Shanghai and Tianjin have relatively high doctor to patient ratios. However, once one leaves the city centers and travels to rural China, particularly southwestern China, the ratios become much lower, dropping to a low of 0.81 doctors per thousand China‘s plan to construct new facilities will be focused in the regions currently facing low doctor to patient ratios and therefore many market opportunities for medical device and healthcare IT companies will be located in these regions.

Figure 12: Provincial breakdown of Medical Services in China



In response to the government‘s call for wider utilization of IT in the healthcare industry, the developed coastal regions have kicked off a series of healthcare IT trials. Beijing and Shanghai, together with other developed cities in the east and south coast, are taking the lead in establishing a unified healthcare IT system in China. Significant investment is therefore already underway in these developed markets. However, China is seeking to encourage IT investments in rural regions by selecting 22 provinces and municipalities for a pilot program to trial a system that can better use and manage electronic medical records. The program includes the following provinces: Hebei, Liaoning, Heilongjiang, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan, Shanxi, Qinghai and Xinjiang. The two municipal cities are Beijing and Shanghai[32]

Figure 13: Various upcoming Health IT projects in China



1.4.1 TOP 10 HOSPITALS IN CHINA

Overview:-

These are the list of the top 10 hospital in China based on the services they provide, the quality of services, the technology they use number of beds being occupied. List of Top 50 hospitals in China has been included in Annexure 3.

- **Beijing Xiehe Hospital**

  Research Institute: Technical guidance to the National Center for Intractable Diseases Clinic, Endocrine Research Center, Obstetrics and Gynecology Research Center, Eye Research Center, Nuclear Medicine Research Center, International Classification of Diseases Cooperation Center. Good effects at: cardiovascular diseases, gastrointestinal diseases, thyroid disease, diabetes, deafness, dizziness, kidney disease, respiratory system disease. Expert and doctors: more than 30 famous experts.

  Divided into 2 compounds: Eastern and Western

- **1st Clinical College of Zhongshan hospital Guangzhou**.

  Researching institute: Organ transplant centers; angiography cerebro vascular disease prevention office of Guangdong; the World Health Organization (WHO) Rehabilitation Center. It was titled "China mainland's medical institute Hong Kong persons trust most" in 2004. Good effects at: Kidney transplantation, broken toe replantation, 100% area of burn, test-tube baby, infant gastroschisis repair, giant hemangioma, kidney transplant, liver transplant, combined liver-kidney transplantation (ranking top level for both amount and survial rates in China: liver transplantation, kidney transplantation, or combination of liver-kidney translantation), the first surgery in China for body-linked-infants separated surgery, diabetes, thyroid disease, benign and malignant gynecologic. Experts: more than 30 famous experts

- **Shanghai Huashan Hospital.**

  Researching institute: State key-disciplines: Neurosurgery, Infectious Diseases, Cardiovascular; Hand Surgery Institute; World Health Organization Neuroscience Research and Training Center.

  Good effects at: Brain tumors (Gamma knife radiosurgery for brain tumor features), cerebrovascular disease, brain trauma surgery, hand surgery, coronary heart disease, skin diseases, sexual diseases Experts and doctors: more than 20 famous experts.

- **310 Hospital (General of PLA)**

  Good effects at: Artificial joint replacement, conductive deafness, intraocular lens implantation, kidney transplantation, bone marrow transplant, X-knife treatment, oral rehabilitation, treatment of multiple organ failure, cataracts, eye laser treatment.

- **Shanghai Ruijin hospital**.

  Researching institute: State key-disciplines: Burn, orthopedic.

  Good effects at: Extensive burns, acute necrotizing pancreatitis, diabetes, bone tumor, bone and joint damage, kidney transplant, severe hepatitis, leukemia, eye laser treatment.

- **Beijing Tiantan Hospital**.

  Researching institute: WHO Collaborating Center of Neuroscience, medical research and training center of neurosurgery. Good effects at: Surgical treatment of intracranial tumors, rescue and treatment of head trauma, cerebrovascular disease treatment, peripheral neuropathy and myopathy, epilepsy, Parkinson's disease, hereditary metabolic diseases.

- **Xiangfan Central Hospital**

  Researching institute: PLA Reseach Center of Cardiovascular surgery, Gastroenterology, Dental Research. Good effects at: Cardiovascular surgery, complex congenital heart surgery, coronary intervention, diagnosis and treatment of gastrointestinal cancer, eye trauma, vitreous micro-surgery, bone transplants, brain trauma treatment.

- **Shanghai Renji hospital**

  Researching institute: Gastroenterology is one of national key disciplines; Shanghai Institute of Rheumatology, Institute of Digestive Disease,; Shanghai Human Sperm Bank Good effects at: Rheumatism, lupus erythematosus, otorhinolaryngology disease, deafness, vertigo, acoustic neuroma, intracranial disease, surgical treatment of spinal cord diseases, gynecological diseases.

- **Guangdong Hospital of Traditional Chinese Medicine**

  With five branches and more than 3,000 beds, Guangdong Hospital of Traditional Chinese Medicine is the largest hospital system in southern China. The hospital treats approximately 16,000 patients each day, and outpatient visits total more than 5.6 million annually. Founded in 1933 as Guangdong Provincial Hospital, the organization strives to attract the brightest minds in medicine, pursue the highest levels of traditional Chinese treatment modes along with cutting-edge modern methods and lead China’s medical community in clinical efficacy

- **WuhanTongji Hospital.**

  Researching institutes: the largest organ transplant center in China; Respiratory is one

national key disciplines Good effects at: 14 human organ and tissue transplantation including liver, spleen, pancreas, kidney, pancreas-kidney and others; gynecological diseases, eugenic genetic, gynecological cancer, test-tube baby, chronic bronchitis, emphysema, pulmonary heart disease, asthma.[3]

1.4.2 IT products and services offered by vendors in the hospitals.

- **Guangdong Hospital of Traditional Chinese Medicine**

  Xian Huahai Medical Info-Tech Co., Ltd- It provides the hospital information system to Guangdong Hospital of Traditional Chinese Medicine. The Hospital's information systems include Hospital Information System（HIS）,Clinical Information System（CIS）, laboratory Information System (LIS) and Picture Archiving and Communication System（PACS）. With strong extensibility, flexibility and openness, the system realizes information sharing. It has developed software products with ―indigenous innovations such as MedPACS, the first of its kind approved by MoH and a pilot product by NDRC. Xian Huahai Medical Info-Tech Co., Ltd works in close partnership with IBM. IBM helps to validate a brand new tool for mitigating the complexity of the new XML-based Clinical Document Architecture standard. Using the new tool, the hospital conducted an ambitious data-sharing and analytics project aimed at studying the effectiveness of traditional and Western treatments on chronic kidney disease. The tooling eases the storage and integration of patient data and provides doctors with detailed reports that correlate patients' conditions with their demographics and the presence of other health conditions.[4][5]

- **Shanghai Ruijin hospital**. **Shenzhen Zhongtian Technology Development Co., Ltd**.:-It provides the Hospital information system which consist of 3 major systems-HIS、LIS、PACS, . With leading technology, the System realized information sharing, central storage, unified standards and charge, improved the efficiency of hospital management, enhanced the core competitiveness of the hospital, and made a typical mode for private hospitals information construction. It has collaborated with Tianjian Technology Group . The company provides support services for Healthcare IT.[6]

- **Wuhan Tongji Hospital-**GE Healthcare & Shanghai Kingstar offers regional and enterprise healthcare IT solutions to Wuhan Tongji Hospital. Shanghai Kingstar is GE's Value Added Reseller (VAR) and provide sales and services for GE's Picture Archiving and Communication System (PACS) & Clinical Information System (CIS).[7]

1.5 Health IT Developments in China

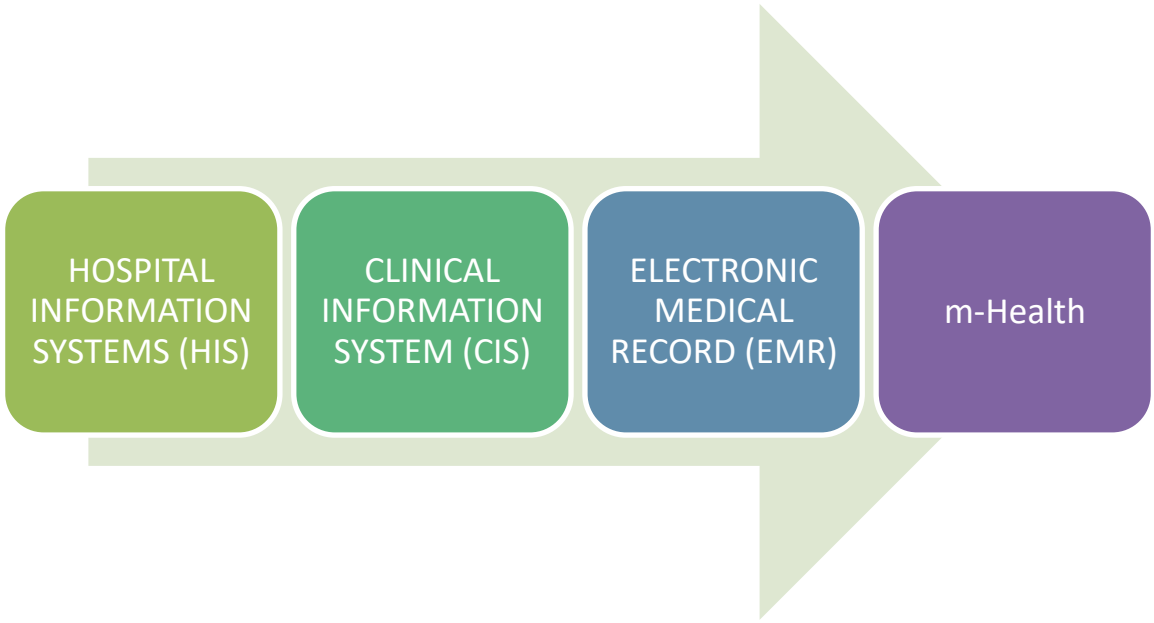


Figure 14: Health IT Developments in China

1.5.1 Hospitals Information System (HIS) in China.

Hospitals have entered the digital and information era as the Chinese economy rapidly progresses towards globalization. Large scale medical equipment is now being widely used in hospitals across China. Various hospitals information system and some clinical information's system are deployed and being used in hospitals. Hospitals computerizations makers many changes and innovations in business practice workflow and hospital management enabling the overall development of hospitals. In China, public hospitals currently encompass 96% of the health care resources in the country, and hospital information systems (HISs) are correspondingly the largest source of patient health information. Under a mandate from the Chinese Ministry of Health, the Chinese Hospital Information Management Association surveyed the utilization of HISs in Chinese hospitals. In 2008, the survey showed that 38% of

public hospitals in China were using HISs. Moreover, 80% of specialty tertiary hospitals, general hospitals and university-affiliated hospitals have been using HISs, and this rate reaches 95% in the southeastern coastal areas. The survey also found that 98% of the HISs in operation was based on relational databases and the client/server architecture. Meanwhile, only 2% of the hospitals were using or planning to use data exchange middleware, and no hospital was using a Health Level Seven (HL7) message interface engine, according to the survey. In China, there are currently more than 300 manufacturers and suppliers of HISs; 15% of them are large organizations, 60% are mid-sized, and 25% are small. It has been indicated that the number of HIS suppliers generally reflects the level and scale of hospital digitization in a country. Meanwhile, the available HISs in China is characterized by a “cost-focused” style, which is primarily concerned with the costs generated from start to end of a course of patient health care. The cost-focused health information that is gathered can thus be a potentially incomplete depiction of the health care process

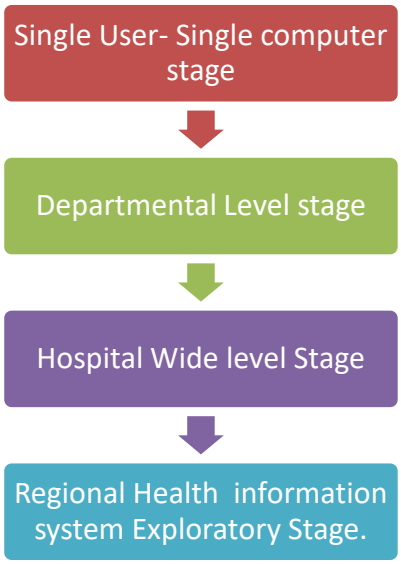
Hospitals computerization in China has made significant progress and has achieved considerable scale. As one of the major aspect of hospital modernization hospital computerization is an indispensible. The development of modern medical sciences, ranging from molecular biology, clinical diagnosis, preventive medicine and hospital management to a very large extends depends on wide use of Health IT applications. Hospitals are confronted with enormous challenges related to the reforms of the overall health care system in China and the implementation of a comprehensive health insurance system. Computerization is not only essential for hospitals to survive , it allows them to develop and adapt to their reforms. It is the only way for hospitals to achieve scientific management the upgrading of social and economic benefits and the improvement of health service quality.[32][33]

Figure 15: Computerization of Chinese Medical Institution

	Number of Hospitals	HIS	Percentage
Hospitals at province or ministry level	930	781	84%
Hospitals at city level	3,081	1,232	40%
Hospitals at county or district level	11,913	4,050	34%
Total	15,924	6,063	38%

Hospitals system in China has moved through four stages over the past 30 years.

Figure 16: They can be demonstrated as follows.-



During the various stages of computerization, hospitals acquired their HIS using one of the three options:

- Purchase: - Currently in the domestic market there are HIS products developed by both local and overseas companies. The strengths of the local HIS products include independent intellectual property rights, reasonable technical support, relatively low

pricing and design concepts that conform to Chinese Hospital management models. As a result over 90% of hospitals have purchased HIS products developed by domestic companies. Few Hospitals chose overseas HIS products due to their higher price plus design concepts and procedures that are quite different from Chinese management practices.

- Self development: - Large general/ teaching hospitals generally developed their own HIS since they had sufficient human resources and funding, plus a good R &D environment. Some hospitals established or acquired IT companies, who operated as a sub- branch of the hospital but primarily fulfilled their hospitals computerization requirement in addition to providing technical services to other clients.
- Joint Development- A hospital cooperating with a university, research institute or a company, jointly developed customized HIS to achieve their computerization goals. The system however was generally not for commercialization.

Currently most third tier hospitals use Hospital management information systems which provide basic facilities for the management of their daily operations. Lower tier hospitals are also rapidly introducing information system. Meanwhile the development of HIS are making solid progresses shifting from financial and administrative management to clinical and decision making areas.

Unbalanced development of Healthcare

The development of a hospital computerization is unbalanced and is demonstrated through regional economic development and the tier of the hospital. The more developed the economy of the region, the higher the tier of the hospital tends to be, since there is a large investment in computerization and high degree of development. According to the ministry of health statistics up to June 2001 30 – 35% of hospitals have established an HIS. The percentage was all most 80% in east China but less than 20 % north western China.

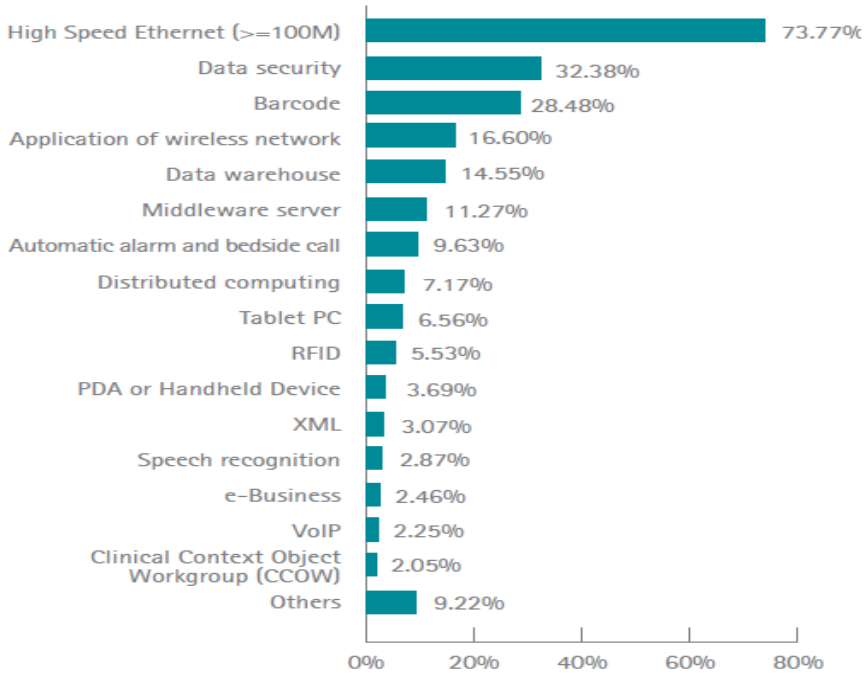
The top three information technologies applied in Chinese hospitals are fast Ethernet (>100M), data security and bar coding. These technologies were ranked in the top three of hospitals in different tiers, with different cumulative investment located in different economic regions. This shows that some hospitals were paying introducing these mainstream technologies. [32][33]

Figure 18: Investment in computerization in hospital in China

[Categorized by Hospital Tier]

	< 2 million		2.01-5 million		Over 5 million	
	Qty	%	Qty	%	Qty	%
Third-tier hospitals	74	33.04%	61	76.25%	113	91.87%
Hospitals lower than third-tier	150	66.96%	19	23.75%	10	8.13%
Total	224	100.00%	80	100.00%	123	100.00%

Figure 19: Information Technology applied in Hospitals



1.5.2 CIS (Clinical Information System) in China.

Most Chinese hospitals have established MIS in recent years. Some of them are building their own clinical information system. Some hospitals with grates levels of computerization have clinical information system covering a large number of department and specialty.

Figure 20: Clinical Information system in China

System Name	CHIMA Survey 2005 (%)	Center for Health Statistics & Information, MOH Survey 2007 (%)
Laboratory Information System	37.70	26.43
Ancillary Department Information System	36.48	Unknown
Inpatient Physicians Workstation	35.04	22.30
Outpatient Physicians Workstation	32.99	21.59
Radiology Information System	33.40	21.30
PACS System	25.20	9.00
Clinical Decision Support System	12.30	6.29

Problems in Clinical Information System.

The percentage of CIS application in Chinese hospitals in fact very low but a substantial number of ancillary diagnostic department use stand along system. Many hospitals have implemented stand alone radiology PACS, ultrasound and pathology image and text reporting and even lab information system which unfortunately were implemented by these department to meet their own internal requirement.

When the department implemented this system they did not take HIS integration into consideration as a result these are stand alone system and the data stored in these systems is very difficult to convert to new system. The objectives of CIS application include the prevention of errors, improvements of quality and overall efficiency. The use of CIS in china is generally in the trial and exploratory stage. The domestic players play very less attention the application processes of the clinical information system. The successful implementation of CIS includes the use of medical knowledge bases, clinical guidelines for various disease, clinical pathways. In China there are no specialized entities authorized or certified to compile and develop knowledge bases hospitals in China, use CIS that are developed by different companies that do not have standardized interface. Domestic developers do not follow standards because they know little about CIS standards, and these application do not have standard interfaces. The drug knowledge

base should be encouraged and should actively support the Clinical Information System which will help in reducing the prescription error. Administration authorities should publish uniform medical record formats which all software companies must follow when developing their products. The authorities should promote technical standard that must be adopted by CIS products.[32][33]

1.5.3 Electronic Medical Record (EMR) in China

An electronic health record (EHR) is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting. This information may include patient demographics, progress notes, problems, and medications, vital signs, past medical history, immunizations, laboratory data and radiology reports.

The EMR implementation requires the integration of systems developed by multiple companies among many health institutions, but China there are currently no standards or related support available . To provide intelligent functionality, The EMR requires integration with the various medical knowledge bases and structured information processing, whose implementation faces tough barrier. Data security continues to be a challenge when talking about the sharing of health record information. A consensus plan for a security control model that meets all the requirements of different types of EMR users nor authorization methods have yet to be achieved. Since physician and nurses are data collectors and users of EMR system, user friendly plays a vital role in weather the system will be widely accepted by practitioners in routine practice.

To further advance the reform of China's national health care system, in June 2008 the Ministry of Health partnered with GE and Intel to establish the Ministry of Health - EHR Steering Committee (EHRSC), which is responsible for designing and validating standards, policies, and guidelines related to the national electronic health information systems, as well as verifying that software vendors 'applications comply with standards

Domestic hospitals have become increasingly interested in the EMR. Some of the Tier 3 hospitals though have got EMR installed but Tier1 and Tier 2 hospitals has HIS as a basic hospital computerization system. The EMR adoption rate is still very low that is 6.6-9.7 when compared to the other developed countries or developing countries.[32][33]

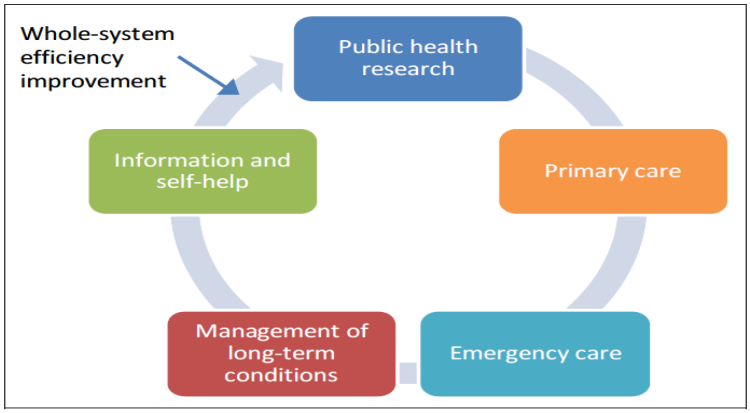
1.5.4 m- Health in China

An mHealth service or application involves voice or data communication for health purposes between a central point and remote locations. It includes telehealth (or eHealth) applications if delivery over a mobile network adds utility to the application. It also includes the use of mobile phones and other devices as platforms for local health-related purposes as long as there is some use of a network.

These mHealth applications are emerging in response to opportunities and needs that are similarly diverse, including the threat of pandemics; globalisation and population mobility; an ageing and increasing population; rising income (leading to lifestyle changes); increased expectations of health provision; demands for the personalisation of healthcare; and a growing focus on behaviour change, disease prevention, and keeping people out of hospitals.

These applications are being enabled by the fundamental characteristics of mobile networks and devices: locatable, near-ubiquitous, connected user interface devices, often personalised, delivering computing power at an affordable cost, integrating a range of sensors, and supporting mobility (which is essential in some applications but not all). [35]

Figure 21: Five themes under which m- Health can be grouped.



Projects of m- health in China:

- On a wider scale, rapidly deployed communications systems designed to support the response to natural disasters, such as those deployed after the Wenchuan earthquake in China's Sichuan

Province in 2008, those deployed after the Haiti earthquake in 2010,15 and the 40+ worldwide deployments of Frontline SMS

- Medicine Link", a Chinese mobile information service on safe drug use and other healthy lifestyle issues, as well as a platform to disseminate public health information. Subscribers to the service can receive up to five public health messages per week on drug safety and healthy eating, along with policy updates and notifications of any currently known adverse reactions to food and drugs.
- Hospital appointment booking systems, such as the 12580 service in Guangdong, China.
- Platforms to facilitate the efficient provision of information, consult-ations and feedback in rural areas, including systems for monitoring and streamlining the reimbursement of healthcare costs, such as those being developed in Guizhou Province in China.
    - In Guangdong in China, a "smart drug regulation" system is being established for piracy prevention. A single central database holds information on the provenance of medicines. Each package is coded with both an RFID tag and a 2D barcode. Fixed or mobile networks can be used to access the central database and authenticate a package.
    - The mobile video visitation project is currently being trialled in Dongguan Tungwah Hospital in Guangdong Province.
    - Accenture is helping Doctors in China spend more time with patients using Mobility
    - A fully customised Smartphone/Tablet for healthcare worker
    - Provides a hospital communication service, whereby jobs can recorded and sent to individuals or groups with minimal keyboard entry

Google has added an extra revenue model with its Android open operating system for mobile devices. Like Apple, it is exploiting an ecosystem of developers to spread the risk of app creation, and to increase the utility of its services.[35]

1.6 Healthcare Insurance System

Health insurance is a combination of national medical insurance and commercial medical insurance. China has a national medical insurance program, but it does not cover everyone. The

national medical insurance is the major player at present. The commercial medical insurance has a very rapid growth in past years.

1.6.1 Public Healthcare Insurance System

There are mainly three types of basic medical insurance in China named

- New Rural Cooperative Medical Scheme (NRCMS),
- Basic Medical Insurance for Urban Employees (BMIUE)
- Basic Medical Insurance for Urban Residents (BMIUR).

Traditionally in China, the major basic healthcare insurance is the BMIUE, which is jointly paid by the employees and employers. Despite those employees, there is relatively few basic medical insurance for the people living in rural area and unemployed, children, aged people. For those people, without reimbursement, the healthcare fees are relatively high. Therefore, the government later provided two new basic healthcare insurance to cover those people: the NRCMS and BMIUR. The New Healthcare Reform aims to extend the coverage of NRCMS (targets at people living in rural areas) and BMIUR (targets at children, aged people, and unemployed in urban areas) to increase the affordability of the targeted population. Also by setting higher reimbursement rate in primary care than in Tier 2, Tier 3 hospitals, the insurance system helps encourage patients getting treatment from primary cares.

One company's research suggests that less than 30% of China's population has medical insurance today. It estimates that over 40% of urban and 57% of rural populations have no coverage at all. Nearly 50% of healthcare costs in China are borne by individuals and are typically paid out-of-pocket. In the poorest areas, encompassing hundreds of millions of citizens, people cannot afford to pay for even basic healthcare service. Chinese commercial insurance companies have expressed interest in underwriting health policies through public-private partnerships but Beijing has been reluctant to cede control – and potentially introduce market risk. Health insurance is expected to remain administered directly by the state.[49]

Urban: Pre-reform urban insurance policy separated the urban population into two publicly financed schemes based on job description. Between the Public Health Insurance Scheme and the Labor Health Insurance Schemes, about 75% of the urban labor force was covered. Public health insurance covered public sector employees. This group included employees of government, academia and political institutions; military personnel, veterans and college students. It was financed by the state and regulated by China National Labor Union and the Ministry of Organization. By the end of 2006 only 47% of urban residents had been covered. Among the reasons for low coverage is its exclusion of the unemployed, self-employed, children and students, as the target has only been formal employees thus far. Noncompliance by foreign and public enterprises seeking to cut costs and local officials reluctant to responsible for funding the public health services under its own administration. The central government finances only national hospitals, research institutions and medical schools.[49]

Rural *:*Medical coverage in rural areas is constrained in two ways. The first cause is infrastructure. Rural areas have neither the managerial capacity nor the infrastructure to support broad policy initiatives like mandatory insurance. Medical schemes, including the NCMS, remain community financed and voluntary. Risk is pooled at only the township level, which means the threat of insolvency exists, the fate of most rural Chinese financing schemes. Smaller risk pools also increase the problem of adverse selection: those with expensive, chronic illnesses subscribe more which drives up premiums and increases the rate of drop-outs by "good risks"—those who utilize medical care rarely (the healthy). The risk pool then becomes a pool of bad risks, which again raises the possibility of collapse. This scenario is ever-present as the "good risks" in rural areas are generally younger Chinese that leave for urban areas. This brings us to the second constraint on medical coverage: subscribers cannot take their coverage with them. WHO projects that by 2020, 300 million rural dwellers will have migrated into the cities. That means 50% of China's population will be living in urban areas. This will obviously have huge implications for healthcare—both in coverage and also in overutilization of healthcare resources. [49]

Achievement of the 11th FYP

Increased Basic Medical Insurance System**:** The coverage of basic medical insurance has been extended to cover the majority of the civilians in China. According to the MoH, in the end of 2010, the population covered by the New Rural Cooperative Medical Scheme (NRCMS) had reached 835 million with 95% coverage, which meant that NRCMS has become the medical insurance program which covers the biggest population in the world. According to the Ministry of Human Resources and Social Security of the People's Republic of China, it was estimated that by the end of 2011, the urban medical insurance (both Basic Medical Insurance for Urban Employees (BMIUE) and Basic Medical Insurance for Urban Residents (BMIUR) will cover 90% of the target population, and the number of people covered will be 440 million. The reimbursement rate has been raised to lower the financial burden for patients. The governments of all levels have been continuously increasing its investment in basic medical healthcare insurance. Although the reimbursement rate varies in different regions, the reimbursement rate for getting treatment in primary cares is often as high as 60%-80%.

According to the 12th FYP, the medical insurance coverage will be further extended, planed to cover all citizens in 2020. Government would invest more in medical insurance for citizens to raise the reimbursement rate for patients.

China Insurance Regulatory commission (CIRC) is an organization which release administrative rules on insurance funds investment options, which allows investment in unlisted companies and private equity funds. The rule also increases the maximum percentage of overseas investment, real estate and private equity out of insurer total assets. CIRC issues basic guidelines relating to internal control of insurance funds allocation and management. [49]

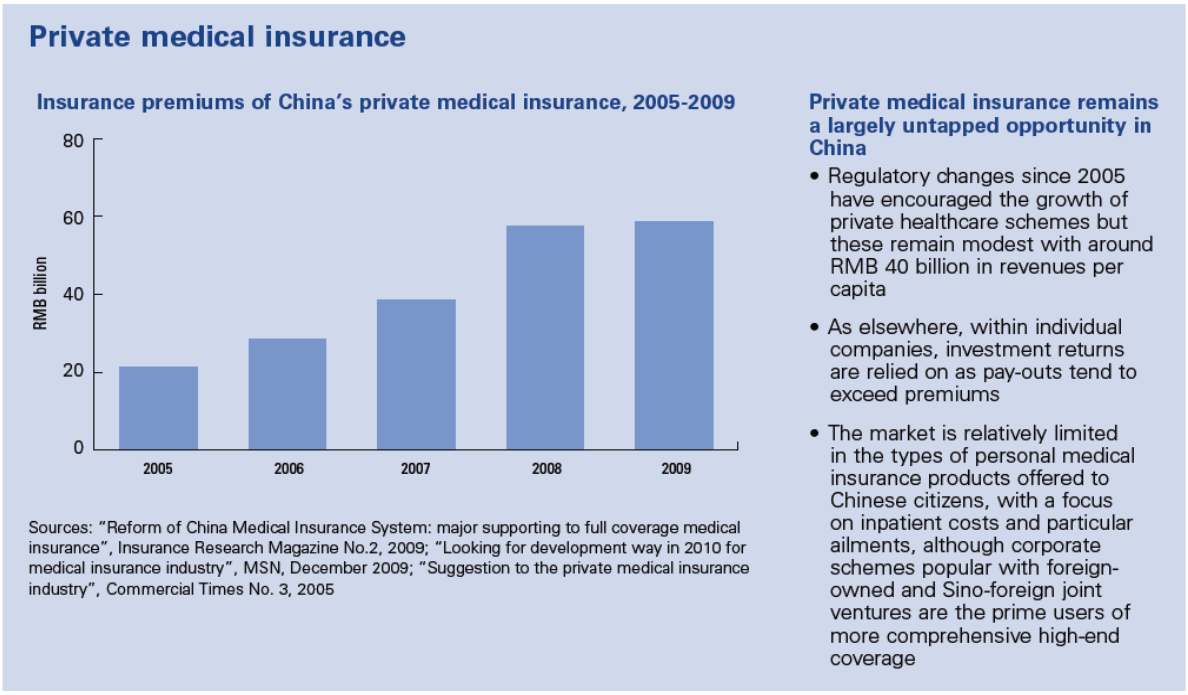
1.6.2 Private Medical Insurance

A key foundation of healthcare reform is a significantly increased role for public medical. In principal, this change aims to resolve the high out-of-pocket payment rates(of around 55%) seen in China. It could create growth challenges for private medical insurance industry that remains relatively small.

Aware of potentially negative interpretations of expanded public insurance scheme on private providers, reforms literature to date has stated its support for the continued growth of commercial insurance alternatives. Niche requirements company-led schemes and the overall growth of China's middle class (from 70 million in 2005 to an estimated 520 million by 2050) offer sound drivers for growth.

Despite its expanded coverage and depth, public insurance shall remain relatively basic by some international standards (an annual subsidy of RMB 120 per capita by 2011, compared with an effective spend of RMB 30000 per person in the UK). Many specialist healthcare requirements and the desire to avoid public waiting lists mean out of pocket payments are likely to continue. This provides an opportunity for private insurer.[29]

Figure 22: Private Medical Insurance in China



Source: The changing face of Healthcare in China,:KPMG,2011

Table 6: Private Health Insurance Companies of China

Insurance Markets	Registered Capital (RMB Billion)
Big China Life	Data not Available
Ping An Insurance(Group Company)/Ping An Health	Data not Available
Hexie Health Insurance	1.000
Sunshine Life	1.650
PICC Group	Data Not Available
CIGNA-CMC	Data Not Available
Allianz China General Insurance	0.220

Source: The Changing Face of Chinese Insurance Market, Towers Watson, September 2010

Ping An Insurance(Group Company)/Ping An Health:- They signs a cooperation agreement with Discovery, the largest insurance company in south Africa. Under the agreement Discovery will become the 1st strategic foreign investor of Ping An Health with 20% equity investment into the Health Insurer.

Hexie Health Insurance- CIRC approved Anbang Property and causality insurance company to acquire and restructure reward Health Insurance company following this Reward Health was renamed Hexie Health Insurance. After the acquisition the company's registered capital increased from RMB 0.3 Billion to RMB 1Billion and the major shareholder Anbang Property and causality insurance company has a 99.73% stake share. [37]

Table 7: Shows the List of New entrant and Potential entrant in China's Health Insurance market

New entrant	Potential Entrant
Aetna	BUPA
China Post Group	HSBC
Dinge General Hospital	
Hannover Re	
Seoul Guarantee Insurance	
Swiss Re	

Source:- The Changing Face of Chinese Insurance Market, Towers Watson, September 2010

1.6.3 Role of Healthcare IT companies in Medical insurance

Another major area for development would be in medical insurance information systems. China will accelerate the development of medical insurance systems with compound functions like fund management, expense settlement and control, management and supervision of medical behaviors. There is also potential to strength to the development of basic medical insurance and enhance transparency. [38]

1.7 Market Segmentation

China's healthcare IT market is generally divided into three categories: hardware, software and digital services. However, that investment trend is changing as investment strategies have begun to shift toward software and services. Long-distance healthcare and regional healthcare also present a growing market in China soliciting further investment.

Market consolidation of IT Company in industries such as Telecom, Finance, manufacturing have taken place. The application system market is highly concentrated and is dominated by a few international suppliers. Unlike these industries, the HIT market is far less concentrated and there are many uncertainties. Therefore many IT companies look at the Healthcare industry as one big market. Recently many International IT providers such as Cisco, IBM, GE, Intel, Microsoft, Oracle, Phillips. Siemens increases there expansion into the Chinese HIT Market , getting ready to compete against domestic IT providers who, on the one hand are trying to maintain their existing customers and on the other increasing scale through merger, acquisition , restructuring and cooperation with their overseas counterpart to face the current challenges.
[22][24]

1.7.1 Healthcare IT trends of China

- The short-term application of healthcare IT in the field is expected to focus on such areas as electronic medical records, electronic archiving of medical records, community healthcare and wider healthcare management. Many of these needs spring from a strong demand for cross-regional information and data sharing between medical institutions that have emerged from the rapid development of China‘s healthcare infrastructure.
- Around 90% of China‘s hospitals are at some stage in the adoption of the standard Hospital Information System (HIS)1 platform, or more sophisticated alternatives. However, that still leaves an estimated 3,000 hospitals without a database system that is easily accessible or transferrable across a wider hospital and clinic community. In addition, China‘s hardware infrastructure is relatively basic. Thus the opportunity for IT players is significant, with each of the nation’s 1,200 Tier-III hospitals requiring upwards of RMB 10 million in IT upgrades.
- The fragmented nature of the required upgrades presents multiple contract opportunities, especially as the government wishes to consolidate the currently diverse IT resources – such as platforms, centralized servers and customized PC networks – used across China‘s various regions. Some areas where healthcare IT investment is likely needed include:

1. Upgrade of healthcare IT to cover all medical systems in China;
2. Expansion of healthcare information centers in big and medium-sized cities;
3. Acceleration of the informatization of medical centers in urban areas;

4. Expansion of the use of EMR;
5. Reform of health insurance management;
6. Expansion of the market share of multinational IT providers; and
7. Further development of mobile applications.

Domestic Hospitals have become increasingly interested in the EHR as the hospital computerization evolves CIS, especially with the implementation of the physician work station. Significant progress has been made in order entry, medical record documentation and system integration. According to the 2005 CDHIMA survey, of 500 responding hospitals 35.04% 32.99% implemented impatient physician workstation and clinical physician workstation system respectively, and 27.46% electronic health record system. According to the survey covering 3765 hospitals conducted in2007 by information center, MOH, the percentage of the three systems above was 22.30%, 21.59% and 8.98%, respectively[23][43].

1.7.2 International and Domestic Players

While the MOH (Ministry of Health) does not enforce any governance on use of domestic versus foreign vendors, it does tend to encourage use of local vendors. Many local vendors are viewed as having technology strength that is comparable to that of foreign vendors. It is widely believed that no one vendor can cover all IT hardware needs. IBM, HP and Dell are considered market leaders for PCs and servers. Cisco, H3C and Huawei are considered market leaders for network equipment. IT software purchasing decisions are more inclined to favor domestic vendors based on geography. For example Kingstar Winning takes a large share of the market in Shanghai and Wuhan.[22][42]

DOMESTIC PLAYERS

A. **Shanghai King star Winner**: - Shanghai Kingstar Winner Medical Information Tech operates as a provider of health care IT solution. It provides solutions for HIS, EMR,LIS and RIS/ PACS solutions, insurance systeand community public health management system.It has partnership with GE and Merge Healthcare. GE Healthcare & Shanghai Kingstar has Partnership and offers regional and enterprise healthcare IT solutions to a growing China market. It provides comprehensive healthcare IT solution that covers all aspects of clinical, administrative, community and public health management. Under the

partnership, GE distributes Shanghai Kingstar products while Shanghai Kingstar has become a GE Value Added Reseller (VAR) and provide sales and services for GE's Picture Archiving and Communication System (PACS) & Clinical Information System (CIS). In addition, both companies co-market and develop Hospital Consulting services besides offering other professional expertise. Shanghai Kingstar provides Tier 1 HIS, with 8.7 percent of the market share amounting to RMB32.8 million in 2009.

- The company also holds a significant share of the PACS and Radiology Information System (RIS) in China, with a 4.3 percent market share valued at RMB8.7 million. Shanghai Kingstar is currently expanding well into East China, Central China, South China, and North China and has already covered 709 counties in the public health segment. Its Electronic Medical Records (EMR) R&D results are also highly commended by China's Ministry of Health.Merge Healthcare(Milwaukee, WI, USA), has partnership with Shanghai Kingstar Winning They are providing clinical imaging solutions Merge Healthcare China office (Merge China) will make available clinical imaging solutions in more than 800. The strategic partnership between Merge Healthcare and Kingstar Winning. Are providing solutions for rural health technology and infrastructure. Together, Merge and Kingstar Winning provides cost-effective, quality solutions into more rural areas, success of the government reform plan. [18][19][20]

Neusoft Medical Systems

Neusoft offers comprehensive IT solutions for China's medical industry and personal healthcare network service ranging right from hardware to software and from technology to services.

- They provide hospitals of all levels with over 50 different models of digital medical imaging systems. Categorized in 10 series they include among others, CT and MRI scanners, digital X-ray as wells as diagnosis ultrasound systems. In addition, they have also delivered comprehensive, patient-centered e-hospital solutions including HIS, CIS, LIS, EMR, PACS, RIS, CAD and remote diagnosis. Targeting personal healthcare, they have helped many large hospitals build up "Xikang" health management systems and deliver remote medical services to patients. Neusoft public health information system helps in prevention and

control of diseases and helps in effective management of public health, especially in case of a public health emergency.

- Neusoft Public Health Emergency Response Command System Solution
- Neusoft Disease Control & Prevention System Solution
- Neusoft Health Supervision & Enforcement Solution
- It offers a Full Range of Total Digital Hospital Solutions (E-hospital solution). Neusoft offers e-hospital solutions that can be implemented in a sustainable manner. These include application systems for different departments, module-based multiple application system frameworks, diversified information interactions and scenario-specific solutions.
- Being a landmark brand of Neusoft Medical in the healthcare segment, XIKANG integrates the most useful resources of regional medical centers and community healthcare facilities through the combination of health Internet of things (IOT), health cloud platforms and outstanding medical resources. XIKANG is oriented to provide families and individuals with full-lifecycle healthcare services that even incorporate a chronic disease prevention ecosystem.
- Neusoft has partnership with IBM, CISCO,Intel, Microsoft, Philips, Hewitt, HP.[21][22]

B.Tianjian Technology Group

Founded in 1993, Tianjian is one of the first companies in Mainland China to engage in medical information technology R&D.

- Tianjian provides software products that support digitalized hospitals and regional systems, and provides solutions to integrate healthcare IT and other related operations.
- Tianjian‘s headquarters are in Beijing, and the company‘s business spans China.
- In terms of market share, sales growth, technology and standards, the company has taken a leading role in China and Tianjian is regarded as the top Chinese company providing comprehensive medical solutions.
- The company was appointed to support the healthcare IT system of the People‘s Liberation Army.[32]

C. Xian Huahai Medical Info-Tech Co., Ltd.

A high-tech enterprise specializing in digitalized healthcare, R&D of healthcare IT as well as related manufacturing, sales and services.

- Huahai has served many well-known hospitals in China and was the first to offer 24-hour customer service via 800 toll free phone calls.
- It has branch offices in over 20 cities in China including Beijing, Shanghai, Guangzhou, Urumqi, Jinan, Kunming, Chengdu and Nanjing.
- It has developed software products with ―indigenous innovations‖ such as MedPACS, the first of its kind approved by MoH and a pilot product by NDRC.
- Its partners include HP, IBM, EMC, Oracle, BARCO, Planar and WIDE, and the company aims to further strengthen its international cooperation.[32]

D.China National Software and service –

- It specializes in providing firmware, security software, operating system, e-government solution, enterprise informationsystem software and a broad portfolio of other it and software development services in china.
- It will work with hunan depart of health for the digital hospital information system(dhis) and its implementation throughout the entire province.
- Some of the products of china information technology system are picture archiving & communication system, electronic medical record (emr) system , clinical doctor workstation system clinic classification system , shenzhen citizen health card system , resident doctor workstation system , resident doctor workstation system , resident doctor workstation system .
- Some of the customers of China National Software and service are Longgang District Maternal and Child Hospital of Shenzhen City , Bao'an District Maternal and Child Hospital of Shenzhen City , Dongguan Branch of Tongji Medical College ,Shenzhen Second People's Hospital , Shenzhen Buji District People's Hospital. It covers all the hospital of Shenzhen province.[24][43]

E. DHC Software-

- It is engaged in the development of application software and customized software, computer information system integration and the provision of related service. In addition to healthcare ,

the company also provides products and services to other industry. The company operated its business mainly in domestic market.[44]

International Players:-

A.IBM

- IBM has been in China for 30 years. It is the largest IT services provider in China for domestic IT services of consulting, development and integration, and IT outsourcing. It leads all service segments in China, and Gartner estimates that total IT services revenue was x690 x in 2008.The firm provides services related to strategy, operations management, IT, and HR, and business advisory services, while IBM's range of additional IT consulting services is extremely comprehensive. Most of IBM's consulting services are part of IBM Global Business Services (GBS).
- IBM GBS Consulting service lines include Strategy and Transformation, Business Analytics and Optimization (BAO), Enterprise Applications, and Application Innovation Services. IBM is expanding work on applications for use in Chinese hospitals after spotting an opportunity in the country's massive spending plan for healthcare reform.
- Google, IBM also teamed to take health records from PDA to e-health database in 2009
- IBM is also deploying a digital record system that allows storage of information based on traditional Chinese medicine at the Guangdong Hospital of Traditional Chinese Medicine in southern China.
- By linking the medical records at the two locations, the system is partly meant to encourage patients to go to the smaller community hospital for minor health problems.
- China's largest Chinese medicine hospital which receives about four million patient visits a year -- to create an electronic patient record system that blends input from both Chinese and Western medicine. IBM's new China Industry Solutions Lab will help local and regional health organizations shift their focus to coordinated, integrated care.

- IBM is deploying technology in a group of hospitals in China's southern Guangdong province that will help the hospital standardize its patient records, then use the records to make statistical analyses of traditional Chinese medicine treatment.
- IBM expects to complete the deployment of its health-care analytics technology, called Clinical and Health Records Analytics and Sharing, or CHAS, in Guangdong Hospital of Traditional Chinese Medicine by the end of the years.[9][10][11][12]

Future plans:-

- It plans to work with China to provide hospitals with platforms for collaboration and information sharing designed at the company's new healthcare product lab in Beijing. Among the applications being worked on at the lab are those that display electronic health records shared between hospitals, allow virtual conferences between doctors and interpret terms used in traditional Chinese medicine for digital classification[11][12]

B. Microsoft Corporation (China) Limited Co.

Microsoft China was founded in 1995. The company has a long-term development strategy for China, and also has a number of investments in the Mainland.

- Microsoft has representative offices in many Chinese cities, including Shanghai, Guangzhou, Chengdu, Nanjing, Shenyang, Wuhan, Shenzhen, Fuzhou, Qingdao, Hangzhou, Chongqing and Xi‘an.
- With its wide network, Microsoft is able to run a nation-wide business with a focus on primary research, product development, sales, technological support, and education and training.
- After years of expansion, Microsoft has established a Microsoft China R&D Group, Microsoft Hardware Technology Center in Asia, and a number of other R&D centers and technology support units (in Beijing, Shanghai and Shenzhen).
- The company collaborates with Chinese government bodies such as MoH, medical institutions and other partners to develop solutions in the following fields: digitalized hospital;

informatization of community clinics; regional healthcare IT systems; and application of healthcare IT in rural areas. [32]

C.GE Health

- GE health is providing, services and products in China. After having a winning partnership with Shanghai Kingstar Winner it is offering services to a large part of China. It has also announced its 1st electronic medical record system product in a software-as-a-service(SaaS) platform aimed at small or remote physician practices with a lower-cost, monthly fee model
- GE Healthcare's Centricity Advance product offers a combination of EMR, physician administrative management and patient portals.
- The SaaS offering differs from a traditional hosted or application service provider model in that after a start-up fee of $4,000 to $9,000, customers are charged a monthly subscription fee. It acquired it from MedPlexus
- It has also launched launched a three-year initiative called “Spring Wind” which focuses on developing high quality, affordable healthcare products, improving the medical distribution network across urban and rural China, and offering premium services and training for Chinese healthcare professionals.[13][14][15]

D.HP Healthcare

- HP is one of the two largest service providers, as measured by revenue in the Chinese market. HP is still building on its strength in product support services and continuing to add higher value to those services through integrated support services, mission-critical services and business continuity services.
- HP's consulting and development and integration capabilities focus on a selection of vertical sectors, accounts processes and solutions in China.
- HP has an impacting effect of China’s Healthcare industry. Its provides services in Electronic medical Record, Health information exchange (HIE), Telemedicine ,thereby transforming the sickcare to the accountable health management.

- By enabling system process and people with speed precision and accuracy, HP is driving accountable health management across the entire health valur chain from research , patient care , and community outreach to health plan system and services.
- HP has also collaborated with Shanghai Kingstar Winneng and many other domestic players.[11][12][16]

E.KPMG

KPMG is providing quality services for healthcare industries in China. There multi-disciplinary group with industrial knowledge focus and experience provides quality business advisory services to many client in healthcare and insurance industry of China.

KPMG has collaborated with MOH to provide consulting services in the Healthcare mainly the insurance sector. Also building certain reports on China describing the opportunities for private players in China's Healthcare IT.[17]

Figure 23: Domestic Healthcare Industry Vendor Revenue and Market Share by Major Solution

Vendor	Revenue (US$M)	Market Share (%)
Kingstar Winning	21.99	9.3
Tianjian Technology Group (Tianjian)	15.06	6.4
Neusoft	14.75	6.3
Beijing DHC Digital Technology	8.97	3.8
Chongqing Zhonglian Information Industry (Zlsoft)	8.44	3.6
Beijing PKU-DigiCare	7.90	3.4
Viewhigh Technologies	5.86	2.5
Sichuan Yinxing Software Co., LTD (Yinxing)	2.64	1.1
Haitai Information Technology Co.,LTD (Haitai)	1.76	0.7
AnyiHIS	1.61	0.7
Others	146.65	62.2
Total	235.62	100.0
Source: IDC Health Insights, 2009		

1.8 Regulations in China Market

The Ministry of industry and information technology under the state council is the key regulatory body with the following responsibilities:-

- Creates development plans for the application of information technology and drafts related regulations and policies
- Sets standards and norms for information technologies and oversees executions
- Determines scopes and directions for foreign investment in the information technology industry.
- Engages in international cooperation in information technologies relating to healthcare.

Since August 2003, China has implemented the CCC mark (UL certification in the U.S. and CE marking in Europe are similar) for a comprehensive list of manufactured goods to be imported or locally manufactured and sold in mainland China. The CCC mark mandates that products manufactured in China or imported into China must be certified before selling in the market.

The CCC mark is required for imported goods and goods manufactured in China; otherwise, products will be held at the Chinese border by China's General Administration of Customs and subject to penalties. Overall, 19 groups — divided into 132 product categories — appear in the required CCC mark list. Of these, two groups are directly related to IT: Group 9 (Information Technology Equipment) and Group 11 (Telecommunication Terminal Equipment). IT providers that do not comply with this regulatory requirement risk penalties as well as business loss, owing to the inability to move goods from inventory to sale of goods. IT providers should follow the steps in the following Execution of Policy section or hire a third-party agent in China to work on the application of certification.[47][48]

Impact on Information Technology (IT) Market -The CCC mark requirement has been in place for nearly 10 years; however, importers of foreign goods and IT manufacturers are still confused about the mechanism and processes. It could take months for the application of CCC marks to be processed, and the requirement that the products must comply with Chinese GB standards has been explicit. The process to apply for certification requires IT producers and importers to have a certain level of local support resources, unless they are using a third-party consultant to fulfill the application task; however, IT companies with a significant amount of imported products, or manufacturers producing locally, need to consider a localization strategy in terms of human resources and expertise in third party management.[45][46]

1.8.1 Health care IT regulation in china-Various domestic organization like Chinese healthcare information standard committee(CHISC) works on the analysis of requirements for healthcare information standards, drafting frame work for healthcare information standards, introducing international standards to Chinese hospitals. CHISC has completed the project basic frame of national healthcare information standard which will be detailed in following section-

- HL7 China
- Electronic health record (EHR) steering committee
- Cooperation center of Peking Union Hospital and world health organization(WHO)-Family of International Classification(FIC)
- HL7 china – It aims at developing china’s own health care information communication standard based on HL7 standard.HL7 China organizes activities , holds symposium or training on healthcare information communications

- Electronic health record (EHR) steering committee- It aims at promoting the development and promotion of the HER .Currently it is divided into three groups namely the usage model group that is in charge of the analysis of workflow and standards the technical group that is in charge of optimization of standard and techniques and the intellectual property issues involved in the utilization of standard.[29][32][38]

Progress on the research of healthcare information standard-

Research on the framework and model-basic frame work of national health information standard is one of the three projects initiated by MOH. the framework built four regulations:1)National Health Information Framework- this framework used to manage categories and statistical indexes of healthcare information 2)Health Care Information Descriptions and Archiving Framework , this framework is to manage the healthcare information standard and provide unified methodology for descriptions and archiving in different areas .3)National Healthcare Information Data, this model used to manage data units that belong to different concepts.4) Healthcare Information Data description Frame and Data Dictionary.[11][12][45]

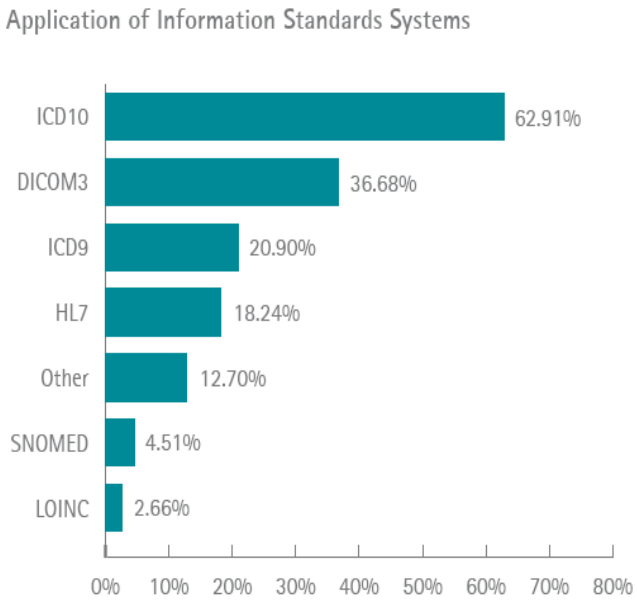
Collection of basic data from hospitals public health and community-Basic data set standard of Chinese hospital information (BDSS) defines a minimal data set by assigning each data unit an expression style, definition and content. These data contain logical inclusive relationships. BDSS will be used as the basis for information communications and exchange among hospitals, healthcare administrative offices, medical insurance institution and disease prevention and control centers[40]

Standardization of traditional Chinese medicine (TCM) information – in recent years significant progress has been made in the field of TCM information standard. For each term, a definition is added. For over 1,000 vocabulary concepts, indexes in Chinese and English languages are completed. This system is a useful tool for studying terminology, translation, natural language processing and regulations in TCM area. It provides vocabulary transfer platform that allow indexing cross data banks. The purpose of this project is to compose a set of

specific terms for TCM compatible with international fields, easily processed by computers and widely accepted by TCM Doctors.

Survey on Chinese hospital computerization –according to the survey it was very common for the hospital to use information coding system. With regard to information standards the top three are ICD10, DICOM, ICD 9.[11][12]

Figure 24: Information Standards in China



Current problems in China

Lack of an organization that ensures healthcare Information Standardization- In china it is very difficult to adopt standards, since there are no large monopoly enterprises. Domestic enterprises do not have the ability and influence to develop standards and promote strongly and continuously and in addition domestic healthcare market is not mature enough.

Lack of investment- apart from organization support funds for standard development do not have reliable source. The life cycle of a standard in general includes following stages: development, issue, promotion, training, education and maintenance. Each stage requires money. In the development stage, standards might be developed in a rush or remain unfinished due to lack of funds. If there are in sufficient funds to support issue, promotion, training, education and maintenance, no matter how perfect the standard id, it will not be applied or updated, which is a waste of investment.

Lack of talent-The special characteristic of healthcare information standard demand talent with deep experience in healthcare and very good IT background, which is short supply in China[11][12][50]

1.8.2 Business Regulations in China

The government has adopted liberal policies to attract foreign investment. In line with WTO commitments to create a level playing field, the PRC government has extended equal tax treatment to all enterprises, whether foreign-invested or domestic. However, in order to continue encouraging technological development, new concessions have been introduced to high technology industries.

The PRC has introduced a framework of commercial law to encourage foreign investment. At provincial, regional and municipal levels, regulations also exist to meet this objective.

The PRC's commercial laws are still evolving. [29]

Contracts and negotiations

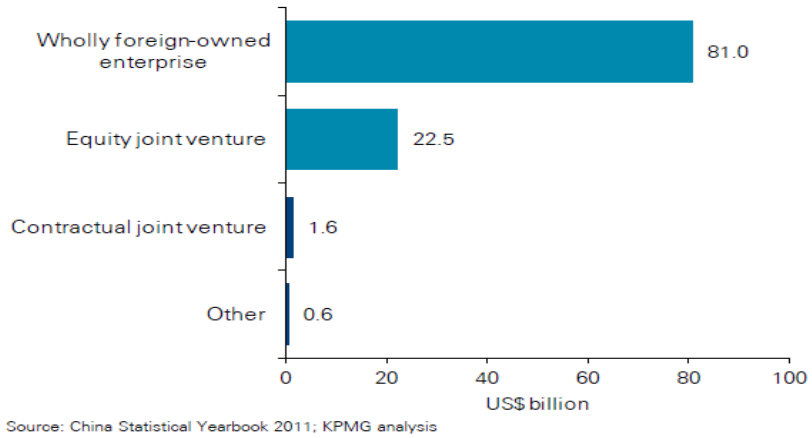
Contracts, including foreign economic contracts, are governed by the Contract Law, which took effect in October 1999.

In practice there is a growing recognition among investors of the importance of including an arbitration clause when drafting a contract. Arbitration can provide a structure for investors and local partners to resolve their differences while continuing to work together, thereby avoiding more expensive litigation procedures. A popular option is to agree to refer any dispute to the China International Economic and Trade Arbitration Commission (CIETAC). This is the permanent arbitration body of the China International Chamber of Commerce. [29]

Forms of foreign investment

The PRC offers a number of different ways to facilitate foreign investment, as detailed below. The most common form is a foreign-invested enterprise. These are established wholly or partly within China, with at least 25 percent foreign ownership. They may be Sino-foreign equity joint ventures, Sino-foreign cooperative joint ventures or wholly foreign-owned enterprises.

Figure 25: Foreign direct investment categories, US$ bn (2010)



Source: China Statistical Yearbook 2011; KPMG analysis

- ***Processing and assembly agreements***

The simplest arrangement is a processing and assembly agreement where the foreign company supplies raw materials or parts on a consignment basis to a local entity in the PRC. A fee is paid to the PRC entity for its work and the processed goods are returned to the foreign company.

- ***Equity joint ventures***

Equity joint ventures are limited liability companies with joint PRC and foreign ownership set up for a specific purpose, such as the establishment of a new manufacturing concern. In general, the foreign partner provides the capital investment, technical expertise and management skills and arranges for technology transfer. The PRC entity provides land, buildings and labour and facilitates the smooth operation of the joint venture. The two parties' equity contributions to the joint venture determine their share of the results.

- ***Cooperative joint ventures***

They are similar to equity joint ventures but differ in that the obligations of each party are detailed in a contract. These contracts typically specify the minimum registered capital and capital contributions of each party at various levels of investment and their respective share of the results of the joint venture.

- ***Wholly foreign-owned enterprises***

Wholly foreign-owned enterprises (WFOEs) are legal entities in China and are wholly owned by one or more foreign investors.

The advantage of a wholly foreign-owned enterprise is that the foreign investor has full autonomy in managing the company. In some cases, a foreign investor may prefer a wholly-owned structure as it can better protect its trade secrets and other intangible assets.

Some sectors still restrict the establishment of wholly foreign-owned enterprises, but these restrictions are gradually being relaxed.

- ***Intellectual property***

Foreign trademarks registered in the PRC are protected by law. Since 1988, the PRC has officially adopted the international system for commodity classification and the Vienna system for design elements classification, thus internationalizing the PRC's trademark registration and administration. The registration of trademarks is governed by the Bureau of Trademarks.

With increased outsourcing of multinational companies' manufacturing activities and distribution of goods to China, managing the associated IPR is critical. While many cases in the PRC involve local companies infringing the IPR of international partners, domestic companies are also starting to defend their brands and IPR more vigorously.[29]

1.9 Accenture in China

1.9.1 Accenture offering IT based service in the following hospitals in China

A. Xinhua hospital (Busiest Hospital in the World)

Xinhua Hospital, one of the largest hospitals in Shanghai, aims to become a state of art, best run hospital in China in terms of patient service and high level clinical quality. To achieve its objective, Xinhua Hospital kicked off an EMR (Electronic Medical Record) project as the key enabler to achieve its strategic objective. The project is a multi-phase, multi-year project. In Phase one, Accenture is working to assess the readiness of Xinhua EMR and provide the roadmap for the hospital to implement this project.

- Xinhua Hospital Turns to Accenture to Help Plan IT Reconstruction
- Accenture Helps Shanghai's Xinhua Hospital Select, Implement Connected Health Systems

- Contract length and the value:- Phase I is a six-week, $77,000 engagement
- Compititore:- Yionggyou and Fugao
- Offering:- Management Consulting

- Accenture won this work because of commitment to creating client value and end to end EMR solution globally.[11][12][51]

B. Yanda Hospital

- Yanda International Hospital, a top-ranking health care facility in Beijing, China, chose Accenture as strategic partner to help streamline its information management systems. Information management and electronic health records are playing an increasingly key role as healthcare providers seek to reduce costs while raising quality standards. Accenture is working is to ensure that Yanda's systems are fully interoperable to promote collaboration and optimized workflows—and ultimately the platform for electronic health records. The first phase of the implementation will cover the hospital's IT management system in Chinese, with English to be covered in future releases. The contract is extendable to accommodate future phases. Accenture Consolidates Yanda International Hospital's Information Systems
- Contract Length and Value:- 12 Months(extandable); US$800,000
- Competitors:- Tianjian Health IT
- Offerings:- Connected Health
- Yanda International Hospital chose to work with Accenture based on its reputation in the marketplace and its comprehensive, cost-effective offering.[11][12][51]

C) WPMI

WPMI Engages Accenture for Infrastructure Outsourcing .

WellPoint - the major US insurance company is expanding into China through WPMI, LLC. WPMI is currently providing insurance consulting services for other insurance companies in China. It is awaiting its own license to start an insurance business in China. Meanwhile, WPMI has again engaged Accenture to provide Infrastructure Outsourcing including a centralized, bilingual help desk, network and security services, onsite desktop support, offsite data center

hosting and a 24/7 operation center, along with business continuity planning and disaster recovery services.

- Contract Length and value:- Three year contract valued at $3.2 million, Net sales increase is $2.3 million
- Offerings:- Accenture Infrastructure Outsourcing
- Accenture won this work on the strength of Infrastructure Outsourcing service capability. WPMI signed the first three year contract in December 2008 and has been very pleased with the service that we have provided to date. Therefore, they have extended the contract for another three years. This win greatly improves Accenture position in China. [11][12][51]

D) PKU International Hospital

Accenture is helping Founder International to define the business, technical and functional requirements for IT systems that will support the new flagship PKU–International Hospital, a 2,000–bed hospital for Beijing University. The client sought assistance from a global IT leader in the health sector that could help quickly build world–class IT systems from the ground up. This win is significant for Accenture: It represents its first deal with Founder International and is a market entry deal for Accenture Health & Public Service opening up future opportunities not only with PKU–International Hospital, but also with other health organizations. Founder International Engages Accenture to Build World–Class IT Capabilities for PKU–International Hospital .

- Contract Length and value:- Eight- month contract valued ar $1.3 million
- Competitors:- Sole –source
- Offerings:- Technology Growth Platform and Management consulting
- Accenture differentiated through close alignment with the client at both the managerial and staff levels. We also leveraged international expertise to present the right resources to help Founder International define its needs and shape an appropriate solution. [11][12][51]

E) Quality healthcare medical services

Quality Healthcare Medical Services (QHMS) engaged Accenture to help prepare a blueprint for Frontline Transformation project to improve clinic-level processes in order to drive better

patient centricity and satisfaction, arrest revenue leakages caused by operational inefficiencies and bottlenecks, as well as reduce overall operational cost. Accenture will:

- Identify process-related issues that exist today across all frontline clinic operations
- Design To-Be processes
- Document business requirements for any future IT enablement
- Develop a quantitative business case to drive business stakeholder ownership as well as define an implementation Master Plan for the next two years.
- This is a strategic win for H&PS Greater China as it marks our first major Health client in Hong Kong. It also positions Accenture as the management consultant and technology partner of choice for QHMS[11][12][51]

1.9.2 Accenture is helping Doctors in China spend more time with patients using Mobility

- A fully customised Smartphone/Tablet for healthcare worker
- Provides a hospital communication service, whereby jobs can recorded and sent to individuals or groups with minimal keyboard entry.
- Messages can include preformatted Task lists. Automatic responses are sent when task lists are updated.
- The Messaging system work over wifi or GSM
- A server side component tracks/displays and allows remote edit of all messages
- All messages and responses are stored for full traceability and management graphs.[45]

It is also offering services in Hong Kong. **Hong Kong** is one of two Special Administrative Regions (SARs) of the People's Republic of China (PRC), the other being Macau.

- Contract Length and value:- 10 weeks, US $120,000
- Business services:- Accenture Health Management Services
- This win for Accenture was largely due to its successful delivery in the initial Business Diagnostic project, which had left the client eager to partner and work with us again. Accenture continued to demonstrate its ability to be business value-focused and issue-based in navigating

the process, technology and organization issues and in coming up with innovative solutions. From a teaming perspective, the winning bid team combined Management Consulting (Strategy) skills and insights with Health industry context.[11][12]

1.9.3 Competitive Analysis: Top IT Providers in China Healthcare Industry

IT Vendors

- A surveyed done by IDC shows that IBM takes up the largest portion of server applications in the current healthcare industry's information system. The crown goes to Oracle for databases, and .NET is the winner in the field of platforms.
- With regard to applications, IBM had the largest share of the market (29.1%), followed by HP (20.9%), in 2007. An example of an IBM project is its collaboration with the Xicheng District Health Bureau to provide infrastructure and EMR system. HP was the appointed vendor for the provision of Health Information System to the Union Hospital of Fujian's requirement for reliability and stability of information systems.
- As for platform application, the MS.NET platform enjoys the highest proportion of 49.1% in 2007. This reflects the special need in the healthcare industry for flexibility and rapid deployment, concerning which .NET has dominant advantages.[11][12][47]

IT Solutions Vendors

- In 2008, the healthcare solutions market totaled RMB 1.61 billion (US$236 million). In the same year, 10 major vendors achieved a combined revenue of RMB 610 million (US$89 million), accounting for 37.8% of the total market size.
- In 2008, Kingstar Winning's solutions revenue was estimated at RMB 150 million (US$22 million), taking a market share of 9.3% and ranking first among major vendors. Neusoft's solutions revenue was RMB 102 million (US$15 million), ranking second. Tianjian Tech Group's solutions revenue was RMB 101 million (US$15 million), ranking third.
- Kingstar Winning boasts the biggest advantage, with its solutions' high commercialization level and short implementation period, as well as the vendor's good quality of service (QoS). In

addition, Kingstar Winning has completed its shareholding reform in preparation for the initial public offering.

- Neusoft has seen rapid development in the solutions market, as it provides both equipment and solutions for the healthcare industry, and has established good relations with the government.
- Pursuing a very solid but not aggressive development strategy, Beijing-based Tianjian Tech Group has maintained a steady and fast growth in the HIS market, as well as in the public health and regional health information systems markets.
- PKU-DigiCARE and Viewhigh Technologies are fast-growing vendors. PKU-DigiCARE is growing rapidly in such sectors as the digital hospital and regional healthcare. Viewhigh Technologies, on the other hand, focuses on the healthcare integrated MIS market, where the market demand has quickly expanded.
- Chongqing-based ZLSoft is highly competitive in product development, offers solid customer services, focuses on the market promotion of the integrated healthcare collaboration platform, and has achieved success in digital hospital and regional healthcare.
- Adopting professional technology platforms and making the best use of its international experience, DHC, on the other hand, has gained distinct advantage in professional HIS technology. DHC focuses on developing information systems solutions for large hospitals.
- Nanjing-based Haitai Information Technology specializes in providing EMR software products, assembles professional healthcare talents, boasts a high level of product professionalism, and joins hands with multiple vendors in offering integrated healthcare information system platforms to develop the market. Haitai particularly focuses on promoting EMR products centered on clinical applications, and has successfully developed suitable applications for the digital hospital as well as for regional healthcare.
- Sichuan Yinxing and Guangzhou Anyi are in the leading position in the regional market, and are quickly expanding to cover the entire nation.[11][12][47]

Table 8: Showing the names of national and international players and services they are offering

Names of IT players	IT Consulting	Hardware	Software	Network Services	Support Services	Medical Devices	Data Centers
Kingstar Winning	✓		✓		✓		
Neusoft		✓	✓		✓	✓	
DHC digital Technology			✓		✓		
Haiti Information Technology	✓	✓	✓		✓		✓
Names of IT players	IT Consulting	Hardware	Software	Network Services	Support Services	Medical Devices	Data Centers
China National Software and service	✓		✓		✓		
Xian Huahai Medical Info-Tech Co., Ltd			✓			✓	
Tianjian Technology Group			✓			✓	

IBM	✓	✓	✓	✓	✓		✓
GE Health					✓	✓	
Microsoft Corporation (China) Limited Co.		✓					
KPMG	✓						
CISCO				✓			✓

Chapter 2: Methodology

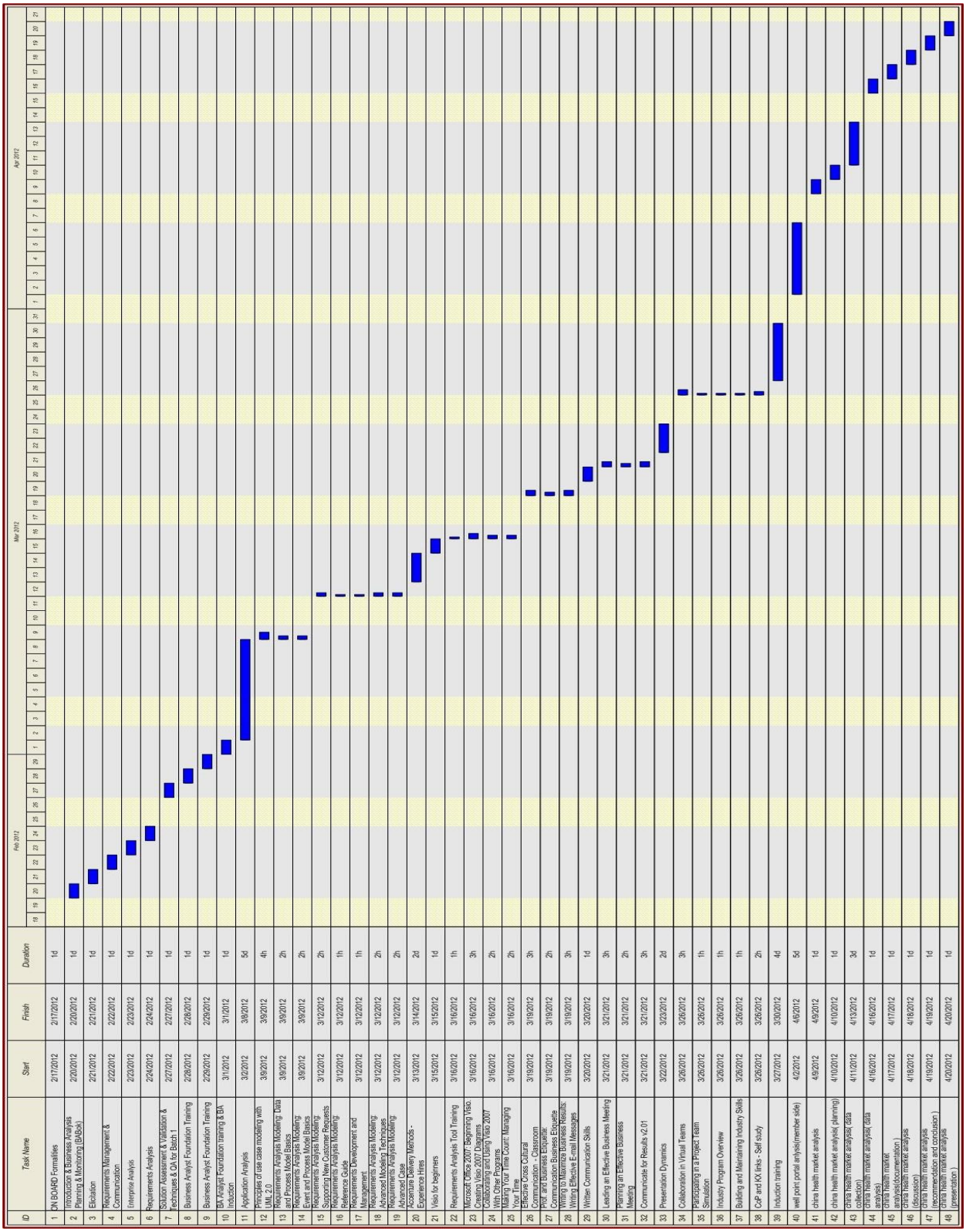
Study design – Qualitative study

Duration of the study – 2 weeks

Output of Analysis: -

- SWOT Analysis
- Porter Method
- Blue ocean strategy

Figure26: Gantt chart



Chapter 3: Results and findings

3.1 SWOT Analysis:-

STRENGTHS	OPPORTUNITIES
• Available IT services for health & life sciences that cover the full cycle of advise, design, build and run • High-end consulting and integration capabilities • Strong industry, functional and technology expertise (Accenture is vendor-agnostic) and proprietary assets • Strong emphasis on healthcare analytics • Accenture provides better after-sale service, which is a critical factor for hospitals when considering vendors. • Ability to leverage GDN for service delivery • Strong client reference list (e.g., 90% of Fortune Global 500 pharmaceutical companies are clients) • Provide innovation and influence the overall direction of HITS through research and insights • As an early provider of ACO implementation, Accenture has pricing	• Health care industry of China has entered into the growth stage after many years of embryo stage. Market demand is high and applications software is thriving and IT industry rapidly growing. • Health information technology investment is rapidly growing and will reach RMB 40 billion in 2015 with annual growth rate (CAGR) of 25% • Another key change is Rapid urbanization of China at a rate of 1% every year so it is expected that by 2020 60 % of China will be urbanized leading to more demanding about the type and quality of services. • Building 986 new hospitals at a county level, 3,549 hospitals at a town level and 1,154 community health service centers at the city level, creating demand for healthcare IT. • The local vendors lack quality so Accenture can emphasis on quality of services it is providing to build on more

power. • Accenture stands ahead of Oracle and CISCO in top IT provider in China. • Also Accenture has a strategic alliance with Digital City, one the leading provider of IT services in China.	clients. • Accenture is providing services to "Xinhua hospital"(one of the busiest hospital in the world), it can build the model and future potential for Accenture to transform more Chinese hospitals. • The total annual health expenditure is increasing at higher speed and has reached 18.72%CAGR, and also the China state council and ministry of health have decided to spend $124.1 billion on improving healthcare industries. • The government has also proposed the expansion of health information centers in big and medium sized cities, apart from this the China government has also proposed the envisages adoption of EMR in all hospitals before 2020
WEAKNESS	**THREATS**
• Price competitiveness is limited in commoditized/sole sourcing deals – unlike in large/complex engagements. • Fewer and less impactful solutions compared to rivals with hardware and software divisions (e.g., IBM and HP).	• Domestic players offer solutions in both major and niche markets, often with considerably lower prices because of lower labor costs, direct market access, and fewer tariff and non-tariff trade barriers. • China's Healthcare industry is

	fragmented i.e they perform individually, so there is problem of data sharing which create barriers to selling and implementing e-health solutions • The regulatory and national standards situation is often contradictory or unclear. • Many hospital administrators in China lack the sophisticated experience in IT, e- Health and Telecommunication required being confident purchasers of an e-health solution. The decision to purchase is based on the brand name of the vendor or the low price point. • In China, doctors, nurses and other health care workers lack sufficient understanding of IT and telecommunications to make good use of e-health solutions. So the Hospital decision makers are really concerned about the e- Health solution adoption rate amongst the hospital staff. • Development of e-health applications in China can be complicated and impede because of growing alarm about information security • In China there is great possibility of, technical and commercial barriers to

	IPR theft .

3.2 Porter's Method:-

Bargaining power of supplier • Accenture depends on the product development company so it can provide support services on Maintenance, Implementation. • GE and IBM are product Development Company and also providing the services, so they need not have to depend on any company. • GE and IBM have the partnership with the domestic players for the services. • GE has collaboration with MOH.	*Bargaining power of customer* • Clients have several options; in effect a buyer's market i.e. many domestic players enjoys a dominant position. • Domestic players offer services which are cost effective. • The clients have various option in terms of HIS,CIS solutions and various others e-health services in China. • Domestic players have ventures with HP, IBM,GE so they give the best standardized solutions to the Healthcare providers.
Threat of substitute products or services • Cost remains major issue as does quality for Chinese Healthcare providers, domestic players offers solutions which are affordable and caters to the short term benefits of the hospitals. • Customers wants services which are in there native language. • GE healthcare is providing its 1st electronic medical record system	*Threat of new entrant* • New competitors emerging for Accenture as we move into Health IT market like IBM, are coming up with innovative products. • IBM is coming up with customized solutions i.e they are providing software, hardware, consulting, products and service support. • GE healthcare is providing its 1st electronic medical record system

product in a software-as-a-service(SaaS) which is cost effective. • Domestic players like neusoft is one of the leaders in Chinese Healthcare IT , so it's difficult for the foreign companies to convince the Healthcare service provider switch to their products.	product in a software-as-a-service (SaaS) platform aimed at small or remote physician practices with a lower-cost, monthly fee model. • Shanghai Kingstar is currently expanding well into East China, Central China, South China, and North China and has already covered 709 counties in the public health segment so its distribution system is well accessed. .

Intensity of competitive rivalry

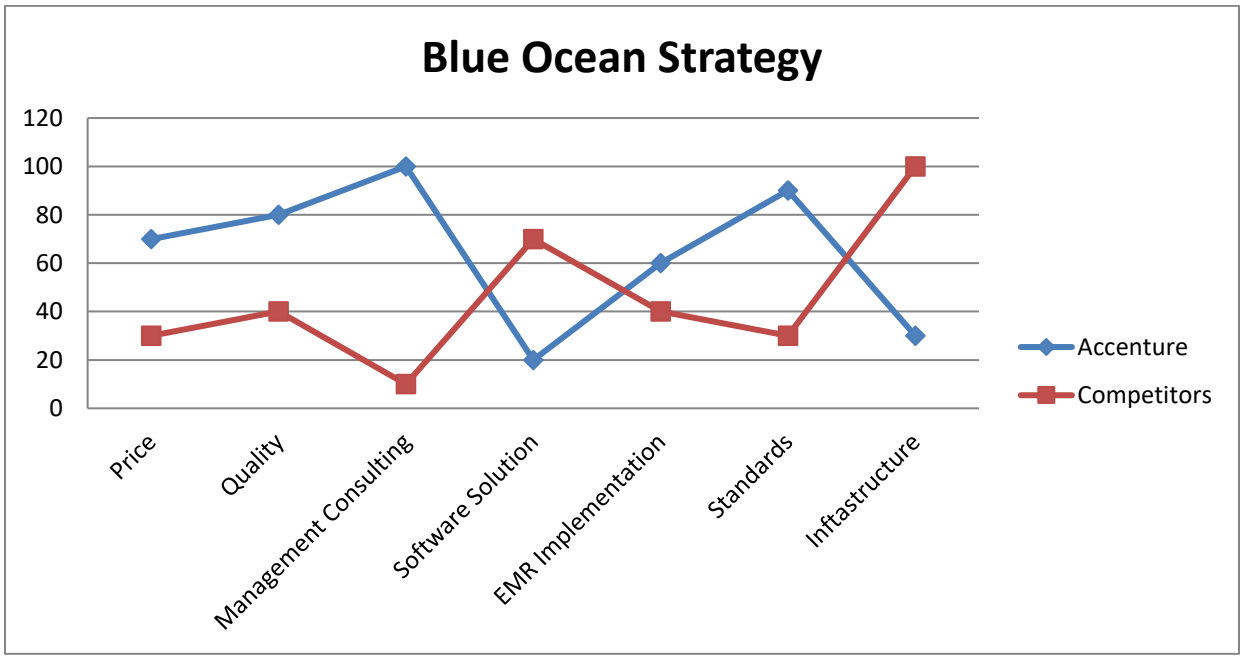
- Domestic players like Neosoft have the competitive advantage over the cost of the health services.
- Many of the foreign players like IBM, GE,HP have comparatively grater market share and enjoys a dominant position.
- Innovation is the competitive advantage for IBM.
- GE is working in close collaboration with the Ministry of Health China.

3.3 Blue ocean strategy

Key Value Drivers

- Price
- Quality
- Management Consulting
- Software Solution
- EMR Implementation
- Standards
- Infrastructure

Positioning of Accenture relative to other market players



Proposed solution to the problem

Chapter 4: Discussion

China's E- health overview

4 Common "Diseases":

• Rising healthcare costs (aging populations, chronic disease)

• Inefficiencies (scheduling, payment)

• Lack of access (too few doctors, especially in rural areas)

• Unsatisfactory quality (incomplete history, medication errors, etc)

4 Common "Treatments":

• Digitization of health information (HIS, EMR, PACS adoption)

• Longitudinal EHR (sharing data via standards)

• Chronic disease management (home health, devices,m-health etc)

• Consumer empowerment (telemedicine, personal health records)

The above discussions states that there is a vast opportunities for IT providers in China were large areas of e- Health are untapped and also were government's spending is increasing.

Providers must keep abreast of new developments in China's ongoing healthcare reform and closely monitor the regulatory landscape in this area in order to take advantage of these opportunities.

4.1 Opportunities for Accenture to expand in the Chinese healthcare market

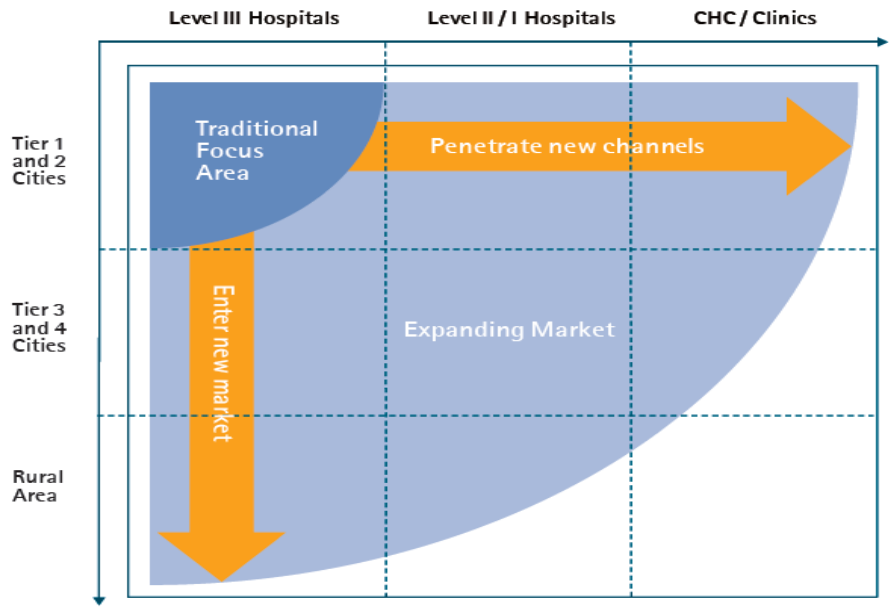
1. Very strong growth for Accenture across the board but particularly in consulting, IT management, software and process management.

- The IT professional services market is forecast to grow at a 21.7% CAGR from 2009 through 2015.The IT professional services market includes consulting, system integration, IT management and business process management.
- The IT professional services market growth reflects the impact of China's rapid growth, along with the added stimulus related to implementation of the 12th Five-Year(12th Five year plan in given in Annexure 4). This can be the biggest opportunity for Accenture to grab.

2. Providing services in the Tier2, Tier1 hospitals:-

- The tier 3 hospitals in China are well equipped with facilities as compared to tier1 and tier2 hospitals which have low utilization rate. The government has invested a huge amount of money for the up liftmen of Tier2 and Tier1 hospital. The market for this sector shows an expanding trend. This can be attributed from the following figure.

Figure 27: Growing Company Presence Beyond China's Major urban Areas



- Accenture can collaborate with the MOH to provide consulting and implementation of e-health solutions to the Tier1 and Tier2 hospitals.
- Also in the new healthcare reform 986 new hospitals are being built at a county level, 3,549 hospitals at a town level and 1,154 community health service centers at the city level, creating humongous demand for company like Accenture to provide XaaS, mainly focusing on IaaS. This can be achieved by collaborating with HOSMAC (one of the leading firm providing healthcare facility, ranging from architecture and engineering to hospital management) or HOSPICE. With this Accenture can expand its network throughout rural China as well because less developed counties are the potential entry points
- The government has also embarked on an ambitious plan to upgrade country's healthcare IT. A sustained drive from government to develop the country's healthcare IT market is also

underway, particularly in areas such as establishing and managing electronic medical records and improving healthcare IT application. Huge opportunities therefore exist for foreign firms like to be involved in this process through process optimization and creation of working group to carry out reengineering.

2.Development of Regional Health Information Networks (RHIN) and Electronic Health Records

- The Chinese government has decided that to maximize the value of e-health and health informatics more integrated e-health networks.. Thus, the bulk of stimulus e-health spending will go into developing Regional Healthcare Information Networks (RHIN)
- Accenture can play a very important role in the development and implementation of Electronic Health Record as a there is a bulk stimulus funding for e- Health that will be spent on developing
- EHR is coupled closely with the need to develop regional health information networks (RHIN)/Electronic Health Record (HER).
- Accenture though have provided end to end EMR solution to some of the hospitals in China but many of the hospitals can still be tapped under Accenture implementation of e-health solution. Since over the last few years a small number of large Chinese hospitals, together with other organizations, have started to explore Regional Health Information Network (RHIN) solutions to enable institutions within a region to exchange and share patient information.
- Accenture can help the MOH in various pilot projects on implementation of various e-Health solutions.

3 .Upgrading and integrating Hospital Information Systems (HIS)/Clinical Information Systems (CIS) and implementing EMR

- Chinese providers are investing in upgrading and integrating their HIS and CIS. It is likely that providers will be interest in sophisticated proprietary products that may be currently unavailable in the limited Chinese vendor market. Chinese providers are also expected to invest heavily in IT services as most hospitals do not have sufficient capacity to manage complex, integrated e-health implementations. Moreover, providers across the

country, particularly in Eastern coastal provinces, are expected to invest heavily in EMR systems that enable them to share clinical data with other providers and healthcare organizations through RHIN.

- Accenture can help the various providers in accessing their needs and then providing various e-Health solutions depending upon their demands and services they are providing to the patients.

3. Radio frequency identification (RFID) technology:

- It was promoted several years ago in health industry, used mainly in sale of medicine and storage management. However, it is not very popular so far because the solutions using RFID technology are not developed and deployed effectively.
- The healthcare industry is similar to other industries in China where use of RFID is limited.
- Accenture can partner with companies like Zhejiang Wangu Technology Co. Ltd, (one of the biggest manufacturer of smart card and magnetic card in China) for RFID implementation initiatives.

4. **China still building on Cloud computing** :

- China is set to pour £98 billion (US$154 billion) to develop cloud computing hubs, according to Asia's first "Cloud Readiness Index," prepared and published by the Asia Cloud Computing Association.
- Although restrictive data protection laws are preventing the building of a global Cloud Computing industry in China, this investment will help the nation improve its index rating in the near future.
- Trend Micro founder Steve Chang is building models on Cloud computing. He has also proposed model for cloud computing in rural China. Accenture can grab this opportunities for building implementation initiatives for cloud computing in rural and urban China.
- Accenture can help the Healthcare industries in China to enhance the service portfolios of the Hospitals.
- Also in the Pharmaceutical Accenture can help in Clinical Data Analysis, Drug Discovery / R&D, Desktop Clouds (Emerging Markets), Bioinformatics.

- In Medical Device it can help in Portfolio Analysis, Web Scaling / Peak Load Management.

7. **The Aged Population in China is increasing at a Noticeable Speed**
    - One of the ultimate goals of the Ministry of Health's EMR and EHR/RHIN programmes is to address systemic health inequalities by developing sophisticated telemedicine capabilities—including powerful telecom networks, shared applications and data center.
    - Tele-radiology, video diagnosis, drugs databases, public health disease surveillance, and proved management of medical emergencies are just a few applications that can be provided electronically to remote regions.
    - Practically zero domestic competition. Telehealth, Telemonitoring and Telecare products and services are very new to the healthcare market in China.
    - Accenture can provide consulting solution so to address the implementation of m- health, telemedicine in most part of China especially patient in poorer and rural provinces so that they can accesses clinical services virtually.

8. Fueling China's pharmaceutical market to become the 3rd largest in the world by 2012 (reference IMS).

- Accenture can provide Healthcare solutions and service for discovery, research and development for the pharmaceutical.
- It can also provide Operational Excellence and Commercial Analytics for the pharmaceutical.

9. Chinese medical devices market grew to 69% from 2006 to 2011.

- The total value that was forecasted was $23.2 billion. The compound annual growth rate of the market in the period 2006-2011 was 11.1%.
- Accenture can provide Healthcare solutions and service for discovery, Research and development for Medical Devices.
- It can also provide Operational Excellence and Commercial Analytics for the medical device.

10) Chinese Health Insurance market is emerging.

- The Chinese insurance industry generated gross written premium form 1,009.9 billion in the first eight months of 2010, up 33% compared with the same period last year according to CIRC.
- Accenture can provide e-claim solutions, decision support system.
- Also apart from that Accenture can also provide fund management, expense settlement and control, management and supervision of medical behaviors

Chapter 5: Recommendations

1) Recommendation on Threats and Weakness.

- Accenture should align their offerings around local market needs, especially within rural healthcare markets and provide tailored and packaged solutions, paying attention to local policies and guidelines.
- Partnering with a research institution to build expertise in creating patented products for the Chinese market.
- Domestic players though offer products which are cost effective but lack quality were urban hospitals can afford to pay high for the latest technology, also rural areas are being encouraged to increase expenditures on e- Healthcare. To cater to these differing needs, Accenture should IT solutions that are not only advanced but also competitively priced, and be able to offer strong post-sales services, such as training. So, always drive to increase the productivity keeping focus on cost reduction.
- Accenture should target the product and service areas that local competitors cannot do well. None of the policies specifically indicate that local IT vendors should be favored in IT purchasing but such vendors might gain an advantage through their private connections which can also be overcome by collaborating with local vendors like Neosoft or Kingstar winning.
- Hospitals are open to foreign vendors that have local presence, a solid reputation and

competitive pricing, and Accenture already has a big name on the globe. Strong client reference list (e.g., 90% of Fortune Global 500 pharmaceutical companies are clients).

- Accenture should hire local sales forces or use local resellers to bridge cultural differences. In China there is great possibility of, technical and commercial barriers to IPR theft so anything which Accenture is implementing it should be implemented along with legal protections.
- Accenture should combine with China health government for setting up the various standards of the data sharing of personal health formation(PHI) and setting the rules for various Health standards. Setting up the standards is the "Vision 2020" for Chinese Government.
- Accenture is providing services to "Xinhua hospital"(one of the busiest hospital in the world), it can build the model and future potential for Accenture to transform more Chinese hospitals.
- Accenture can provide the multi lingual support to have a core competency in respect to other foreign players.

2) Porter's Method:-

- Accenture should merge or venture with several product development company so to reduce its dependency, even venturing with domestic player like Neusoft which is already the product leader will be one of the best possible solution.
- Introduction of more-advanced or edge technology that is not available in the local market. This will be helpful for better development of informationization and the hospital system. Thos will alo help in building against international players like IBM, HP, etc
- Due to the difficulties in balancing cost structure based on wage inflation, Accenture should build short-term (three years) and long-term (five years) strategies. It should either leverage more internal training programs or offer incentive programs, as well as be clear in terms of qualified employees' career path, to strengthen their loyalty within the company.

- Shanghai Kingstar Winning is expanding in East China, South China, North China and west China, Accenture mergence with shanghai kingstar can be beneficial to increase its clients and distribution channels.
- As GE providing its 1st electronic medical record system product in a software-as-a-service (SaaS) platform, Accenture instead of jumping in the same platform can go forward to provide Infrastructure as-a-service(IaaS) which will help in building new hospitals under new government reform.
- Accenture should also consider plans to transfer some business into emerging low-cost north eastern part of China.
- Accenture should keep on tracking China's government policymaking, such as its plan to expand investment in some vertical industries, including healthcare; and take advantage these incentives which will lead to more business development.
- Being aware of incentive policies will help information and communication technology (ICT) providers like Accenture save costs when they expand their business in China's western region. Also evaluating on-site sourcing support based on government incentives, especially on subsidization and tax-refundable regulations, which central and local governments treat differently.

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Chapter 7

Case Study (Quantitative study)

HEALTH INSURANCE AWARENESS AMONGST IT PROFESSIONAL

Topic: Awareness of Health Insurance among IT Professional

AIM of the study: To study the awareness patterns of health insurance among people working in IT industry. .

Methodology- Descriptive type

Duration of study - 10 days.

Introduction:

Insurance is a form of risk management primarily used to hedge against the risk of a contingent, uncertain loss. Insurance is defined as the equitable transfer of the risk of a loss, from one entity to another, in exchange for payment. An insurer is a company selling the insurance; the insured, or policyholder, is the person or entity buying the insurance policy. The amount to be charged for a certain amount of insurance coverage is called the premium. Risk management, the practice of appraising and controlling risk, has evolved as a discrete field of study and practice.

The transaction involves the insured assuming a guaranteed and known relatively small loss in the form of payment to the insurer in exchange for the insurer's promise to compensate (indemnify) the insured in the case of a financial (personal) loss. The insured receives a contract, called the insurance policy, which details the conditions and circumstances under which the insured will be financially compensated.

Principles

Insurance involves pooling funds from *many* insured entities (known as exposures) to pay for the losses that some may incur. The insured entities are therefore protected from risk for a fee, with the fee being dependent upon the frequency and severity of the event occurring. In order to be insurable, the risk insured against must meet certain characteristics in order to be an insurable risk. Insurance is a commercial enterprise and a major part of the financial services industry, but individual entities can also self-insure through saving money for possible future losses.

Insurability

Risks which can be insured by private companies typically share seven common characteristics:

1. **Large number of similar exposure units**: Since insurance operates through pooling resources, the majority of insurance policies are provided for individual members of large classes, allowing insurers to benefit from the law of large numbers in which predicted losses are similar to the actual losses. Exceptions include Lloyd's of London, which is famous for insuring the life or health of actors, sports figures and other famous individuals. However, all exposures will have particular differences, which may lead to different premium rates.
2. **Definite loss**: The loss takes place at a known time, in a known place, and from a known cause. The classic example is death of an insured person on a life insurance policy. Fire, automobile accidents, and worker injuries may all easily meet this criterion. Other types of losses may only be definite in theory. Occupational disease, for instance, may involve prolonged exposure to injurious conditions where no specific time, place or cause is identifiable. Ideally, the time, place and cause of a loss should be clear enough that a reasonable person, with sufficient information, could objectively verify all three elements.
3. **Accidental loss**: The event that constitutes the trigger of a claim should be fortuitous, or at least outside the control of the beneficiary of the insurance. The loss should be pure, in the sense that it results from an event for which there is only the opportunity for cost. Events that contain speculative elements, such as ordinary business risks or even purchasing a lottery ticket, are generally not considered insurable.
4. **Large loss**: The size of the loss must be meaningful from the perspective of the insured. Insurance premiums need to cover both the expected cost of losses, plus the cost of issuing and administering the policy, adjusting losses, and supplying the capital needed to reasonably assure that the insurer will be able to pay claims. For small losses these latter costs may be several times the size of the expected cost of losses. There is hardly any point in paying such costs unless the protection offered has real value to a buyer.

5. **Affordable premium**: If the likelihood of an insured event is so high, or the cost of the event so large, that the resulting premium is large relative to the amount of protection offered, it is not likely that the insurance will be purchased, even if on offer. Further, as the accounting profession formally recognizes in financial accounting standards, the premium cannot be so large that there is not a reasonable chance of a significant loss to the insurer. If there is no such chance of loss, the transaction may have the form of insurance, but not the substance.
6. **Calculable loss**: There are two elements that must be at least estimable, if not formally calculable: the probability of loss, and the attendant cost. Probability of loss is generally an empirical exercise, while cost has more to do with the ability of a reasonable person in possession of a copy of the insurance policy and a proof of loss associated with a claim presented under that policy to make a reasonably definite and objective evaluation of the amount of the loss recoverable as a result of the claim.
7. **Limited risk of catastrophically large losses**: Insurable losses are ideally independent and non-catastrophic, meaning that the losses do not happen all at once and individual losses are not severe enough to bankrupt the insurer; insurers may prefer to limit their exposure to a loss from a single event to some small portion of their capital base. Capital constrains insurers' ability to sell earthquake insurance as well as wind insurance in hurricane zones.

Legal

When a company insures an individual entity, there are basic legal requirements. Several commonly cited legal principles of insurance include:

1. **Indemnity** – the insurance company indemnifies, or compensates, the insured in the case of certain losses only up to the insured's interest.
2. **Insurable interest** – the insured typically must directly suffer from the loss. Insurable interest must exist whether property insurance or insurance on a person is involved. The concept requires that the insured have a "stake" in the loss or damage to the life or

property insured. What that "stake" is will be determined by the kind of insurance involved and the nature of the property ownership or relationship between the persons.

3. **Utmost good faith** – the insured and the insurer are bound by a good faith bond of honesty and fairness. Material facts must be disclosed.
4. **Contribution** – insurers which have similar obligations to the insured contribute in the indemnification.
5. **Subrogation** – the insurance company acquires legal rights to pursue recoveries on behalf of the insured; for example, the insurer may sue those liable for insured's loss.
6. **Causa proxima, or proximate cause** – the cause of loss (the peril) must be covered under the insuring agreement of the policy, and the dominant cause must not be excluded
7. **Mitigation -** In case of any loss or casualty, the asset owner must attempt to keep the loss to a minimum, as if the asset was not insured

Indemnification

To "indemnify" means to make whole again, or to be reinstated to the position that one was in, to the extent possible, prior to the happening of a specified event or peril.

Accordingly, life insurance is generally not considered to be indemnity insurance, but rather "contingent" insurance (i.e., a claim arises on the occurrence of a specified event). There are generally two types of insurance contracts that seek to indemnify an insured:

1. an "indemnity" policy, and
2. a "pay on behalf" or "on behalf of" policy.

Under the same situation, a "pay on behalf" policy, the insurance carrier would pay the claim and the insured (the homeowner in the above example) would not be out of pocket for anything. Most modern liability insurance is written on the basis of "pay on behalf" language.

An entity seeking to transfer risk (an individual, corporation, or association of any type, etc.) becomes the 'insured' party once risk is assumed by an 'insurer', the insuring party, by means of a contract, called an insurance policy. Generally, an insurance contract includes, at a minimum, the

following elements: identification of participating parties (the insurer, the insured, the beneficiaries), the premium, the period of coverage, the particular loss event covered, the amount of coverage (i.e., the amount to be paid to the insured or beneficiary in the event of a loss), and exclusions (events not covered). An insured is thus said to be "indemnified" against the loss covered in the policy.

When insured parties experience a loss for a specified peril, the coverage entitles the policyholder to make a claim against the insurer for the covered amount of loss as specified by the policy. The fee paid by the insured to the insurer for assuming the risk is called the premium. Insurance premiums from many insured's are used to fund accounts reserved for later payment of claims — in theory for a relatively few claimants — and for overhead costs. So long as an insurer maintains adequate funds set aside for anticipated losses (called reserves), the remaining margin is an insurer's profit

Health insurance in India

The five features that characterize the health insurance system in India emerge:1. By and large, the system offers traditional indemnity, under which the insured first pay the amount and theseek reimbursement. Under indemnity, all known diseases or health conditions are excluded and therefore such policies typically have a large number of exclusions. This also means that those most in need of insurance i.e. the sick, get excluded for any financial risk protection against the diseases they are suffering from.
2. It is a fee-for-service-based payment system. Such a system of payment is advantageous for the provider since he bears no risk for the prices he can charge for service rendered by him. Combined with the asymmetry in information, such a system usually entails increased costs.
3. Policies provide a ceiling of the assured sum. Such a system, and that too within a fee-for-service payment system, results in shortchanging the insured as he gets less value for money, as the provider and the insurer have no obligations to provide quality care and/or over provide/over charge services so long as the amounts are within the assured amount of the insurance policy.
4. The system is based on risk-rated premiums. This again puts the risk on the insured as the premium is fixed in accordance with the health status and age. Under such a system, women in

the reproductive age group, the old, the poor and the ill get to pay higher amounts and are discriminated against.

5. The system is voluntary, making it difficult to form viable risk pools for keeping premiums low.

Reasons for poor penetration of health insurance

Penetration of health insurance has been slow and halting, despite the 'huge market' estimated to range between Rs 7.5–20 crores. Some reasons that explain for the slow expansion of health insurance in the country are as follows:

a. Lack of regulations and control on provider behavior
b. Unaffordable premiums and high claim.
c. Reluctance of the health insurance companies topromote their products and lack of innovation
d. Too many exclusions and administrative procedures
e. Inadequate supply of services

METHODOLOGY-

Sample size- 100

Sampling Technique- Random sampling

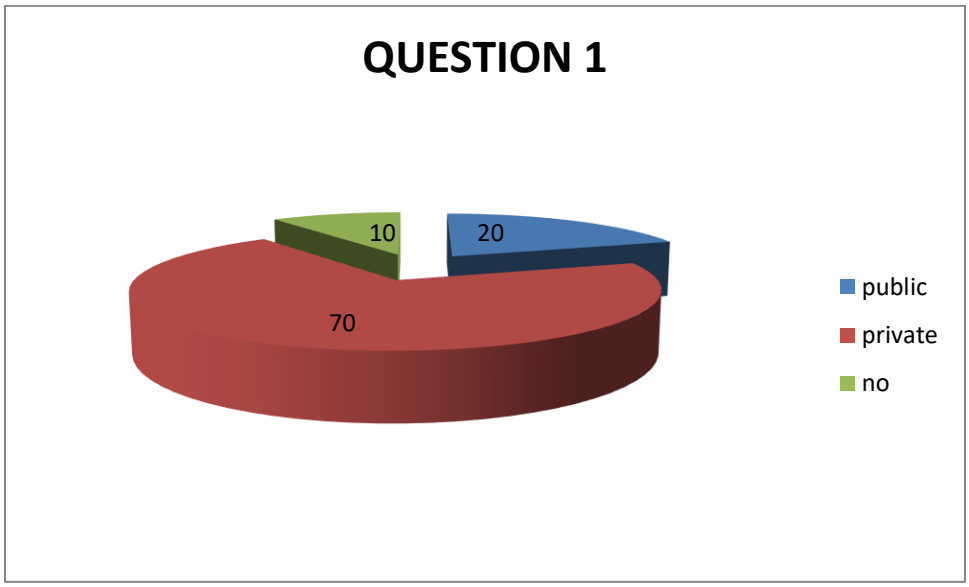
Data type- Primary data

Data collection method- Questionnaire, Personal interview

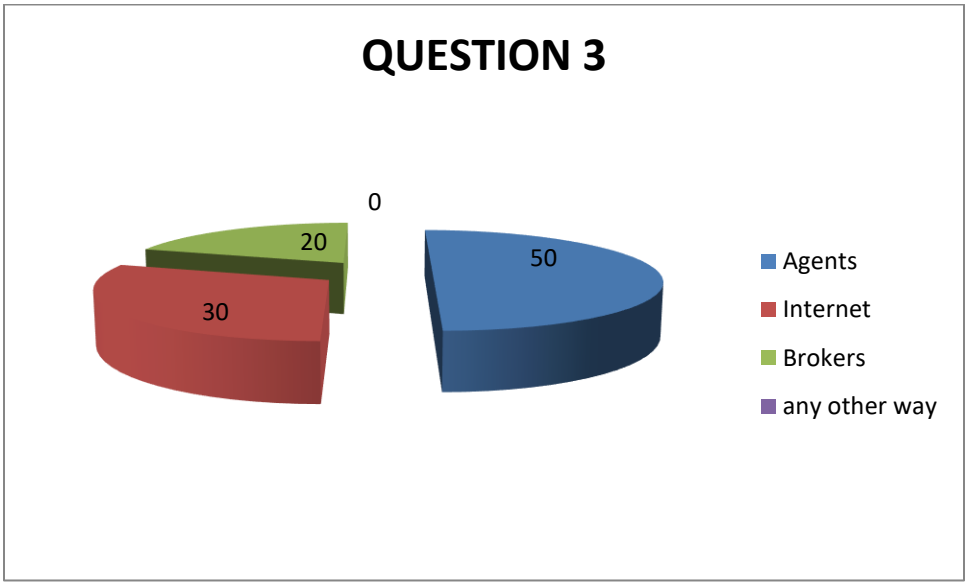
Research design- Descriptive type

Specific findings:

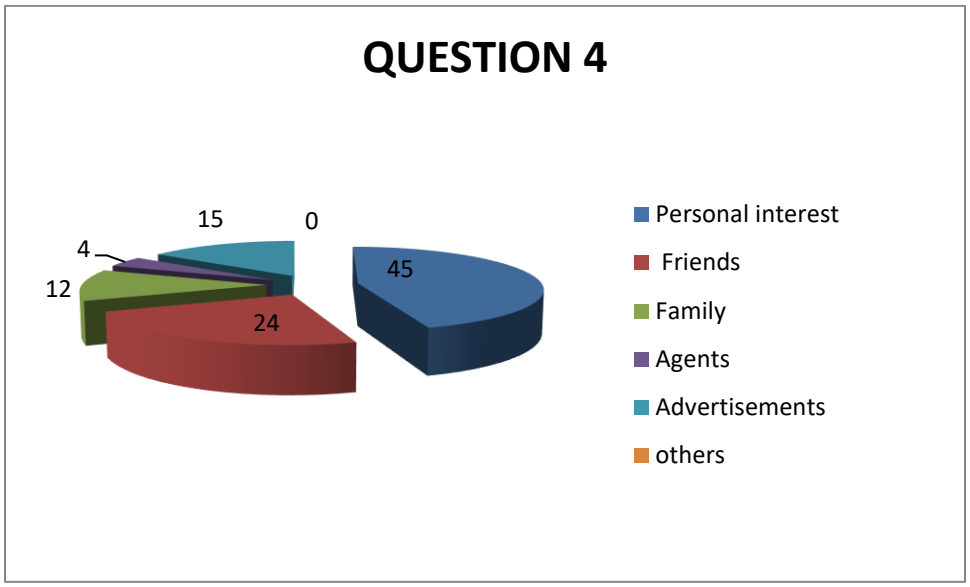
According to this graph 70 % of people have private health insurance



This graph depicts that maximum number of policy has been taken from agents



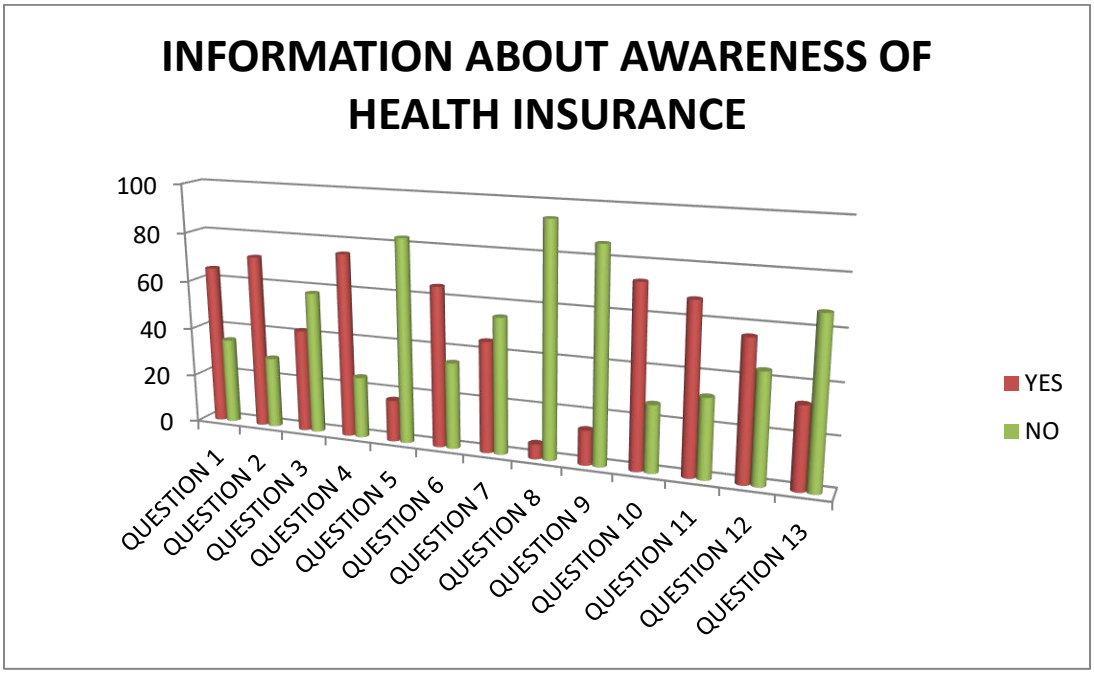
This graph shows that 45%of people take health insurance due to their personal illness or personal interest and 24%of people take policy because of their friends.

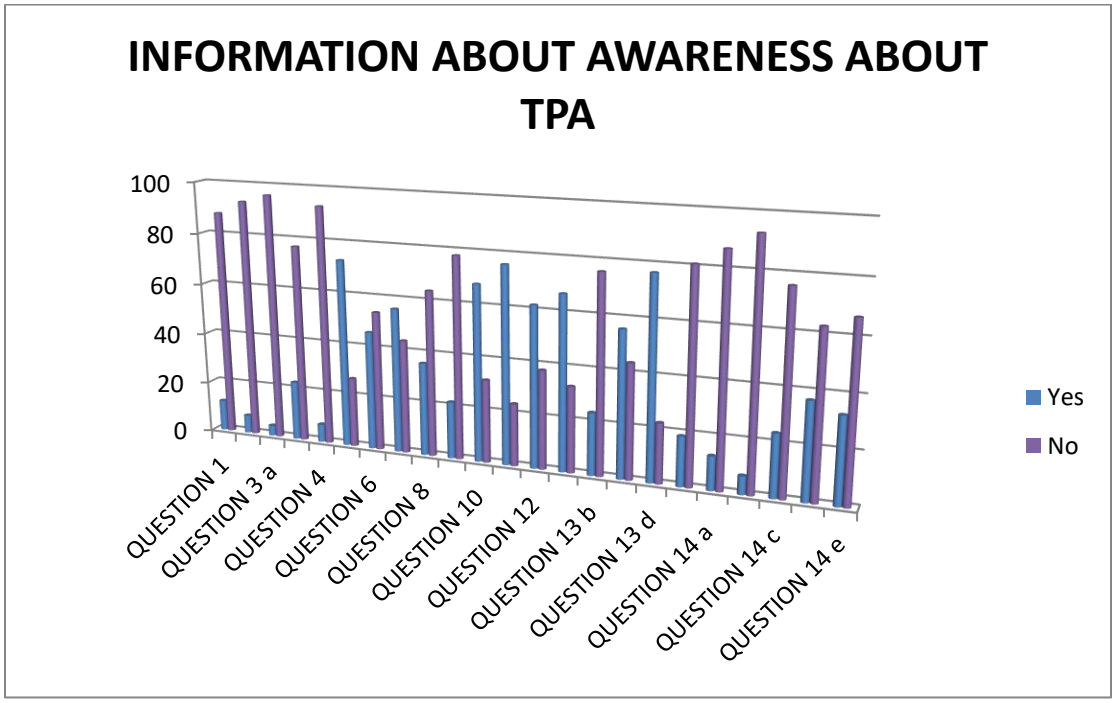


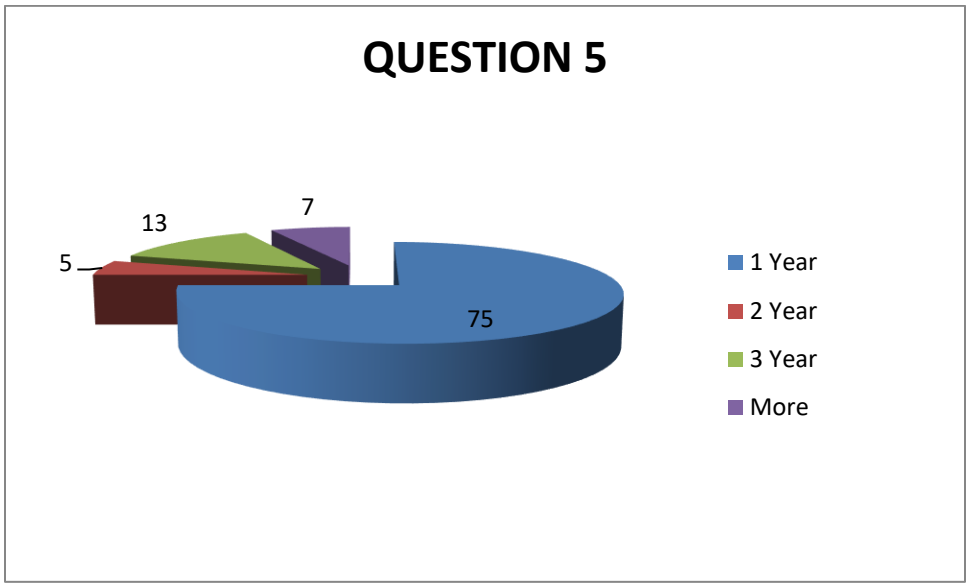
This graph tells about the knowledg of health insurance amongst IT people. In this maximum number of people are satisfied with their health insurance company but the percentage is low i.e. 60%. In the next question the IT people does not know the difference between the role of insurance company and the TPA, they didn't have the idea about what is TPA and what is insurance, only 25 % of people knows what is TPA**.** Then only 50%of people know that insurance does provide free treatment.

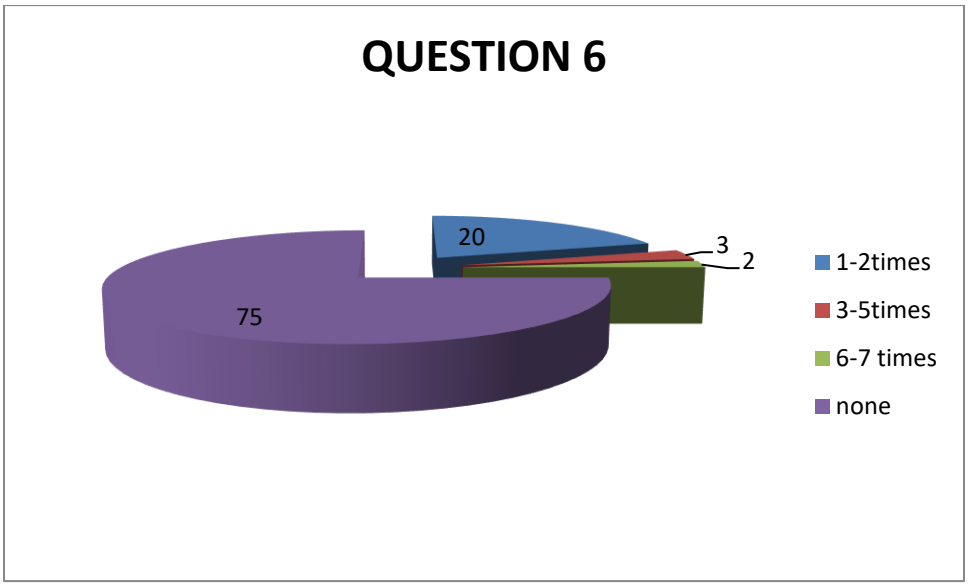
Majority of people feel that all hospitals provide cashless facility but they did not know only the network hospital provides cashless facility. 70% of people have known the fact that claims of their bills should be submitted within 90 days. 52% of IT professional knows that insurance covers the full treatment cover charge.

Majority of people does not know that health insurance also covers the dental and cosmetic services. in the next question majority of people know that maximum age limit of the insurance coverage is 70 years, they also have the information regarding all maternity expenses cater by health insurance. In the next question only 58% of the professional knows that health insurance provides tax benefits.

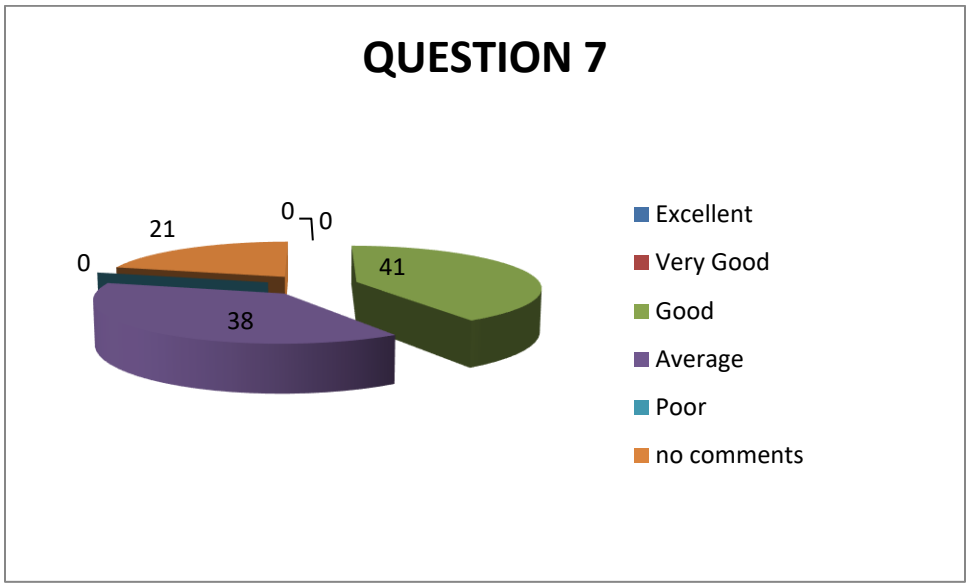

INFORMATION ABOUT AWARENESS OF HEALTH INSURANCE
100
80
60
40
20
0
QUESTION 1
QUESTION 2
QUESTION 3
QUESTION 4
QUESTION 5
QUESTION 6
QUESTION 7
QUESTION 8
QUESTION 9
QUESTION 10
QUESTION 11
QUESTION 12
QUESTION 13
YES
NO

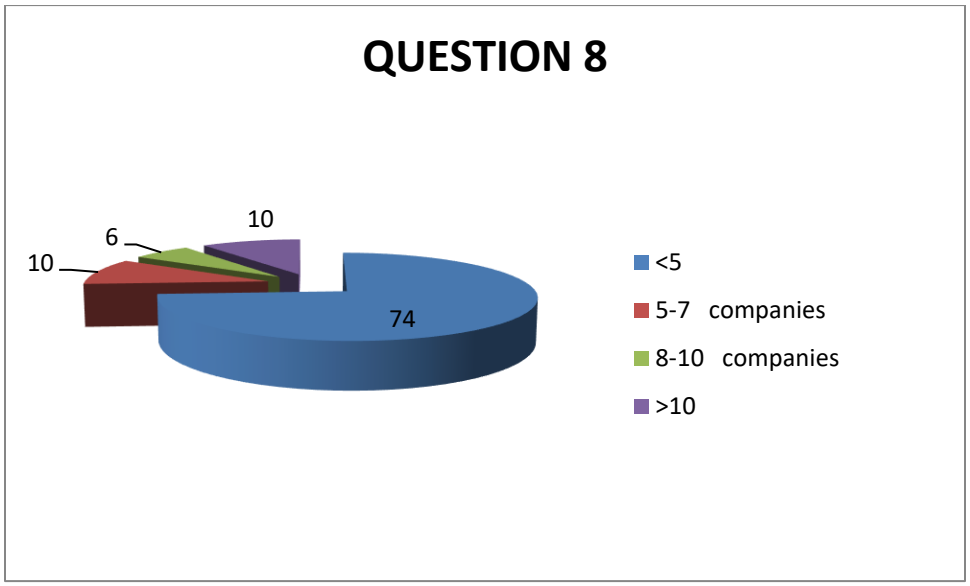

INFORMATION ABOUT AWARENESS ABOUT TPA
100
80
60
40
20
0
QUESTION 1
QUESTION 3 a
QUESTION 4
QUESTION 6
QUESTION 8
QUESTION 10
QUESTION 12
QUESTION 13 b
QUESTION 13 d
QUESTION 14 a
QUESTION 14 c
QUESTION 14 e
Yes
No





The above graphs shows that 75% of people has health insurance for a year , these are the people who are young and the people who has health insurance for more than 2 years are those who have any medical illness, and who are in late 30s. And in the other graph only 20 % of people has incurred claim from TPA, because they were hospitalized.





The above graph Shows that only 40% of people are satisfied by the health insurance policy as they have used it and majority of them thinks that health insurance policy is just wastage of money and time. And in the last graph 74 % of people know at least 5 health insurance companies of India.

Recommendation and Conclusion

- Health IT professional has very less knowledge about the health insurance, role of TPA, various terms and conditions in health insurance due to which they are unable to avail the benefits of health insurance.
- We should provide enough information to the policy holder when they take up the health insurance policy.
- We can also conduct various workshops or provide information regarding their benefits and various services for their health insurance on their mail, so that they should know how and when to avail these services**.**

ANNEXURE

Annexure1

Hospital Data by Province

Number of Hospitals per 10 Million Population, by Province and Administrative Level

All Hospitals		Absolute	Rank		Absolute	Rank		
Beijing	429.3	1	40.6	1*	74.7	9	259.7	1*
Tianjin	253.5	5	37.0	2	73.9	10	92.4	4
Hebei	155.6	16	5.5	27	61.6	13	46.8	10
Shanxi	299.0	4	11.4	9	69.4	11	51.6	9
Inner Mongolian	193.3	14	12.3	8	87.0	5	41.1	13
Liaoning	201.1	13	20.3	4	67.4	12	57.9	8
Jilin	209.6	12	7.7	21	80.1	7	36.9	14
Heilongjiang	237.8	6	17.2	5	87.5	4	81.7	5
Shanghai	214.9	10	21.6	3	84.8	6	17.3	22
Jiangsu	148.1	17	8.7	18	37.4	27	64.4	6
Zhejiang	135.5	19	16.2	6	50.8	16	4.9	30
Anhui	106.8	28	4.5	30	35.8	28	35.8	16
Fujian	95.5	30	10.1	10	41.7	23	15.8	25
Jiangxi	107.2	27	5.7	25	43.0	20	7.2	29
Shandong	133.4	20	9.2	14	42.8	21	41.2	12
Henan	111.6	24	3.3	31*	41.2	24	36.1	15
Hubei	97.0	29	9.8	11	39.8	26	20.8	21
Hunan	110.4	25	6.0	24	42.5	22	25.6	20
Guangdong	124.3	22	8.8	17	35.4	29	27.0	19
Guangxi	87.5	31*	8.9	15	33.3	30	13.8	26
Hainan	216.3	9	6.9	23	27.8	31*	27.8	18
Chongqing	109.0	26	5.5	26	40.5	25	16.3	24
Sichuan	128.4	21	5.3	28	46.6	18	12.5	27
Guizhou	117.7	23	5.2	29	43.4	19	32.7	17
Yunnan	156.6	15	8.4	19	59.8	14	17.0	23
Tibet	351.9	3	7.1	22	49.8	17	135.1	3
Shaanxi	214.0	11	8.9	16	75.8	8	45.6	11
Gansu	140.8	18	9.3	13	59.8	15	9.0	28
Qinghai	237.0	8	13.2	7	148.6	1*	3.8	31*
Ningxia	237.0	7	8.0	20	110.5	2	64.0	7
Xinjiang	355.9	2	9.6	12	103.3	3	200.8	2

Source: China National Health Yearbook 2009, the Ministry of Health.
* Orange shading in cells indicates highest rank (#1); blue shading indicates lowest rank (#31).

Annexure 2

Reforms by the Ministry of Health (2009-2011)

Development of GMIS closely tracking the strategic goal of "new rural cooperative healthcare." The central government and some better-off cities began to plan and develop a uniform public health informatization platform and community healthcare MIS. The China government began, in 2006, to give increasing attention to rural healthcare along with progress in rural healthcare institutional reform and out of overall consideration for healthcare informatization. Based on the current situation in rural health, the Rural Health Department of MOH issued Guiding Opinions of MOH on Development of New Rural Cooperative Healthcare Information System, requesting the establishment of comprehensive and efficient national new rural cooperative healthcare information system within 2–3 years. A detailed implementation plan has also been formulated to develop the system in the following three phases:

Phase 1 (from 2006 to 2007 year-end). While promoting county-level network development and application; completing state- and provincial-level information platform development; completing state- and provincial-level central database planning and initial design; completing first phase application system development and implementation — priority is data aggregation and statistics at provincial level (The new rural cooperative healthcare system will be connected with the provincial network in the first batch of pilot counties.)

Phase 2 (from 2007 year-end to 2008 year-end). Further improvement and strengthening of state- and provincial-level central database design; completing of the second phase application system development and implementation (priority is data collection and management standardization); standardization of new rural cooperative healthcare management system for all counties within each province, and centralized storage of standardized data at provincial central database

Phase 3 (from 2008 year-end to 2010 year-end). Completion of all system design and third phase application system development and implementation (mainly integrated data management,

analysis, and mining); and gradual realization of centralized storage and analysis of standardized data from the new rural cooperative healthcare system

Gradual solution of the standardization issue. Different hospitals use different HISs due to the numerous HIS vendors in China and the different naming and data structure of these HISs. Multiple system platforms and nonstandardized information format impede intra-industry and inter-industry information exchange. It is impossible to exchange data electronically in the case of patient transfer to another hospital; manual operation has to be adopted. This is not only of poor efficiency but can hardly ensure data security. Lack of standardized information format not only impedes HIS but also the realization of such information exchanges concerning CIS and remote healthcare service. Many foreign healthcare solution providers strived to transform from HIS to GMIS in 2006. Total solutions, such as digital hospital, GMIS, and data operation center, were being launched to realize resource sharing in the industry. More work in formulating the Healthcare Information Standard System Framework, Hospital Basic Data Set Standard, and Public Health Basic Data Set Standard will make significant steps in achieving standards for healthcare information exchange in China.

Uneven regional development. In the better-off regions in China, the corresponding healthcare facility and service development started earlier than in other places, hence both the internal and external conditions are better, and healthcare informatization development is better. In contrast, basic healthcare infrastructure remains inadequate in the economically underdeveloped regions. Large hospitals in the better-off regions are actively promoting clinical IT applications such as doctors' and nurses' workstations, and the hardware level is already close to the world's advanced level. However, owing to poor personnel training, the actual performance of IT application is unsatisfactory. Smaller hospitals, due to financial weakness, only have limited IT budget. Interestingly, the midsized hospitals (with 800–1,200 sickbeds) have the best IT application level in China, especially in South China. These hospitals are staffed with good managers with a vision for informatization, and they provide an enabling external environment for informatization.

EMR solution. The China government proposed for the state healthcare system an identity authentication and management system with user flexibility and interoperability, an interoperability standard speaking a "common language" for suppliers, authentication of EMR to support comparative study, and data management, data security and networking functions. The government envisages adoption of EMR in all hospitals before 2020. Popularization of EMR is also the foundation for hospital digitalization.

GMIS solution. As the priorities shift to public health and community-based healthcare, healthcare information integration and sharing, sharing between hospitals and between hospitals and the regulators will be new focuses of healthcare informatization development. In this regard, 2004 after the SARS "trigger" in 2003 was the stage of preparation, 2005 the stage of initiation, and 2006 the start-up stage. However, it still remains in the experimental stage, an untapped market for software and solution provide

Annexure 3

TOP 50 HOSPITALS IN CHINA

Rank	Hospital	Location	Reputation	Research	Total
1	Peking Union Medical College Hospital	Beijing	80.00 (1)	11.78	91.78
2	Sichuan University Huaxi Hospital	Chengdu	64.59 (2)	20.00	84.59
3	General Hospital of PLA	Beijing	58.91 (3)	15.86	74.77
4	Shanghai Jiaotong University	Shanghai	39.63 (4)	12.67	52.30

	Medical School Ruijin Hospital				
5	Fudan University Huashan Hospital	Shanghai	36.60 (5)	11.86	48.46
6	No. 4 Military Medical University Xijing Hospital	Xi'an	34.38 (6)	13.01	47.39
7	Peking University First Hospital	Beijing	34.01 (7)	11.77	45.78
8	Fudan University Zhongshan Hospital	Shanghai	29.52 (8)	14.77	44.29
9	Shanghai Ruijin hospital.	Guangzhou	27.71 (9)	12.06	39.77
10	Peking University People's Hospital	Beijing	26.40 (10)	11.74	38.14
11	Huazhong University of Science and Technology, Tongji Medical School, Tongji Hospital	Wuhan	24.15 (11)	12.29	36.44
12	No. 2 Military Medical School Changhai Hospital	Shanghai	16.60 (12)	10.62	27.22

13	Huazhong University of Science and Technology, Tongji Medical School, Xiehe Hospital	Wuhan	15.07 (14)	12.14	27.21
14	Peking University Third Hospital	Beijing	16.20 (13)	9.37	25.57
15	Chinese Academy of Medical Sciences, Fuwai Cardiovascular Disease Hospital	Beijing	11.98 (19)	12.17	24.15
16	China Medical University First Hospital	Shenyang	10.83 (24)	13.26	24.01
17	Capital University of Medical Sciences, Beijing Anzhen Hospital	Beijing	9.99 (30)	14.02	23.48
18	Zhongnan University Xiangya Hospital	Changsha	12.48 (18)	11.00	23.48
19	Zhejiang University Medical School First Hospital	Zhejiang	10.39 (26)	12.62	23.01

20	Zhongnan University Xiangya Second Hospital	Changsha	12.79 (17)	8.78	21.57
21	Shanghai Jiaotong University Medical School Renji Hospital	Shanghai	13.39 (16)	8.12	21.51
22	Shanghai Jiaotong University Medical School Ninth People's Hospital	Shanghai	11.86 (20)	9.40	21.26
23	Southern Hospital	Guangzhou	13.73 (15)	7.51	21.24
24	Fudan University Shanghai Cancer Center	Shanghai	10.92 (22)	8.90	19.82
25	Shanghai Jiaotong University Medical School Sixth People's Hospital	Shanghai	7.99 (33)	11.21	19.20
26	No. 3 Military Medical University Xinan Hospital	Chongqing	6.02 (41)	12.45	18.47
27	China Medical	Shenyang	10.39 (25)	7.19	17.58

	University Shengjing Hospital				
28	No. 2 Military Medical University Changzheng Hospital	Shanghai	7.71 (35)	9.85	17.56
29	Capital University of Medical Sciences, Beijing Tongren Hospital	Beijing	10.14 (29)	7.19	17.33
30	Capital University of Medical Sciences, Beijing Children's Hospital	Beijing	10.92 (21)	6.00	16.92
31	Capital University of Medical Sciences, Xuanwu Hospital	Beijing	10.29 (27)	6.00	16.29
32	Fudan University Pediatric Hospital	Shanghai	10.92 (23)	4.81	15.73
33	Nanjing General Hospital of the Nanjing Military Area	Nanjing	9.86 (31)	5.84	15.70
34		Beijing	8.74 (32)	6.37	15.11

	Capital University of Medical Sciences, Beijing Tiantan Hospital				
35	Shandong University Jilu Hospital	Jinan	5.18 (49)	9.91	15.09
36	Fudan University EENT Hospital	Shanghai	10.30 (28)	3.71	14.01
37	Shanghai Jiaotong University Medical School Xinhua Hospital	Shanghai	6.86 (38)	7.01	13.87
38	Zhongshan University Third Hospital	Guangzhou	3.65 (61)	10.20	13.85
39	Suzhou University First Hospital	Suzhou	3.65 (62)	9.96	13.61
40	Chongqing University of Medical Sciences Children's Hospital	Chongqing	6.87 (37)	6.70	13.57
41	Zhongshan University Cancer Center	Guangzhou	4.06 (56)	9.29	13.35
42	Jiangsu Province People's	Nanjing	1.50 (94)	11.75	13.25

	Hospital				
43	Guangdong Province People's Hospital	Guangzhou	7.89 (34)	5.33	13.22
44	Zhongshan University Zhongshan Ophthalmology Center	Guangzhou	5.62 (42)	6.29	11.91
45	China-Japan Friendship Hospital	Beijing	3.99 (60)	7.83	11.82
46	Tianjin University of Medical Sciences Cancer Hospital	Tianjin	5.30 (48)	6.31	11.61
47	Capital University of Medical Sciences, Beijing Chaoyang Hospital	Beijing	4.37 (54)	7.16	11.53
48	Nanjing University Medical School Gulou Hospital	Nanjing	3.12 (68)	8.00	11.12
49	Tianjin University of Medical Sciences General Hospital	Tianjin	3.02 (69)	7.86	10.88

50	Wuhan University People's Hospital	Wuhan	1.78 (87)	8.97	10.75

Annexure4

China's 12th Five-Year Plan

China's 12th Five-Year Plan was ratified 14 March 2011. This directive will create new opportunities

and challenges for established providers and new entrants in the IT professional services market. Gartner reviews the key tenets that are related to the service industry based on the following most

frequently asked questions that Gartner gets about how this plan will give providers the opportunity

to gain more market presence:

- Where are the top IT professional services opportunities in China in 2011 and beyond? How are these opportunities influenced or changed by the plan?
- What are the average charge-out rates for domestic IT talent in China today? What impact will the 12th Five-Year Plan have on wage inflation?
- Are there any other new or expected government policies and incentives that will create opportunity for service providers?
- Which IT services providers are making investments in China, and what are they investing in?
- Key Tenets of the 12th Five-Year Plan
- Starting this year, the Chinese government will implement the 12th Five-Year Plan. The plan was formally ratified on 14 March 2011 by the Communist Party of China (CPC) at the Fourth Session of the 11th National People's Congress. The key elements of the plan related to service providers are as follows:
- Will propel economic development to a new level. China has set an annual growth target of 7% in the economy during the next five years. Based on 2010 prices, the country's

gross domestic product (GDP) in 2015 should reach more than US$8,270 billion (55 trillion yuan).

- Will increase spending on R&D to 2.2% of GDP and promote the conversion of advances in science and technology into actual productive forces.
- Will intensify technological upgrading in enterprises, with the focus on enterprises being able to better develop new products and build brand names, increase the integration of technological and process systems, and raise the quality, technology content and value-add of products
- Will develop the next-generation IT industry; will build a high-performance broadband information network; will accelerate the integration of the telecommunications network, the radio and TV broadcasting network, and Internet; and will promote demonstrations on how to use the "Internet of things."
- Will give impetus to the development of industries such as energy conservation, environmental protection, new energy, biotechnology, high-end manufacturing, new materials and new energy vehicles. Will make small and midsize high-tech companies to play their role in fostering the healthy development of strategic emerging industries so they more quickly build their product capacity and core competitiveness.
- Will make every effort to develop and upgrade the software industry.
- Will give impetus to the clean use of traditional energy resources and will intensify the construction of smart power grids.
- Will invest more in improving energy conservation in existing and new buildings; will develop thecircular economy; and will move forward with pilot projects to build low-carbon cities

Annexure 5: QUESTIONNAIRE: A STUDY CONDUCTED TO UNDERSTAND THE AWARENESS OF HEALTH INSURANCE AMONG IT PROFESSIONAL

Serial number……. **Date……**

Name of Respondent:

Age:

Address:

Occupation: Government private

1. Do you have a Health Insurance Policy with any Health Insurance Company?
   1) Yes 2) No
   If yes, which: 1) Private 2) Public

2. Do you have health insurance? If yes, in which company?

   _____

3. With whom you have taken your policy?
   1) Agents 2) Internet 3) Brokers
   4) Banc assurance 5) any other way

4. What factors influence you to buy Health Insurance Policy?
   1) Personal interest 2) Friends 3) Family
   4) Agents 5) Advertisements 6) others

5. What is the value of your Health insurance?
   1) >10,000 2) 10,000-25,000 3) 25,000-50,000
   4) 50,000-1, 00,000 5) >1, 00,000

INFORMATION ABOUT AWARENESS OF HEALTH INSURANCE	Yes	No
1. Are you satisfied with your current Health Insurance Company		
2. Is Insurance agents and TPA are same?		
3. Do you know Health insurance provides free treatment?		
4. Do you know Health insurance is valid for 1 year?		
5. Do you know all the hospitals provide cashless facility?		
6. Do you know Insurance claim report should be submitted within 90 days		
7. Do you know Health insurance pay 100% of the treatment covered charge?		
8. Do you know Health Insurance covers up the treatment for dental/cosmetic		
9. Do you know 70 years is the upper age limit for availing health insurance?		
10. Do you know Health insurance covers up only insurer?		
11. Do you know Maternity/pregnancy related expenses covered under health insurance		
12. Do you know Health insurance provide income tax benefit		
13. Do you know Medical checkup is necessary before buying health insurance policy		
INFORMATION ABOUT AWARENESS ABOUT TPA		
1.Do you aware with services offered by TPA		
2. Have you received the insurance cards from Third Party Administrator?		
3. (A) Do you know the emergency toll free no of your TPA?		
(B) If yes is it giving services 24x7?		
4. Is your TPA gives Assistance in providing Ambulance Service in emergency?		
5. Is your TPA assures a Priority and Quality Treatment at Network		

Hospitals?		
6. Is your TPA ensure solutions to all queries at any time related to Hospital		
7. Is your TPA gives guidelines required for Health Check – ups?		
8. Is your TPA provides speedy claim settlement in case the policy holder has been treated from a Non-Network Hospital?		
9. Do you know that If you have fresh policy/first year policy or recently got your policy renewed check with your TPA about your policy enrollment, failure of which can result in rejection of your cashless authorization request?		
10. Do you know that All claims of the discharge from the hospitals will be processed by the TPA directly / or for reimbursements of all your post discharge expanses directly file all originals documents, bill, prescription in TPA.		
11. Does your TPA help you in claim settlement?		
12. Are you satisfied with your TPA services?		

13) Does your TPA has provided you the following information-

	Yes	No
a)Knowledge of disease covered		
b)Information about diseases not covered		
c)Information about cashle.ss service		
d)List of empanelled hospitals		
e)Illness outside city/overseas permissible		

(14) Does your TPA provided the following services during hospitalization-

	Yes	No
a)Arrange for specialized consultation		
b) about treatment protocol		
c)Audit and scrutinized the bills		
d)Enquire about test /room rates		
e)Enquiry about the length of stay		

5. Since from how many years you have health insurance policy?

1) 1 Year 2) 2 Year 3) 3 Year 4) More

6. How many times you have incurred claim by TPA?

1)1-2times 2)3-5times 3)6-7 times 4) none

7. How do you rate the service offered by your Health Insurance Company?
1) Excellent 2) Very Good 3) Good
4) Average 5) Poor 6) no comments

8. How many Health insurance Companies do you know?
1) <5 2) 5-7 companies 3) 8-10 companies 4) >10