

**Internship at
NTT Data Services, Bangalore**

By

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1. Introduction

Internship is an integral part of the MBA-Hospital and Health management curriculum in which we have to observe and learn the work culture of organization. In this internship period it is necessary to participate in various activities of department so that by this we get exposure of various departments and also understand the work done in the organization. And then to understand the process flow and thereafter be able to involve in decision making.

I started my internship on 6th February, 2017 at NTT Data Services, Bangalore in healthcare applications management area with a vision in my mind so as to be able to learn the practical aspects of healthcare information system in a more detailed manner.

On the very first day I was issued ID cards. Then we had introduction with the managers of healthcare application teams following which I carried out all the HR formalities. We were introduced to the core values and best practices of NTT Data and briefing about the organization. Then next day our training schedule was given to us. I was trained about the complete US Healthcare system, Hospital Information Systems (HIS), Electronic Medical Records (EMR) and Health Records.

We discussed on the dissertation topic after two weeks and two mentors were assigned to me and after discussion with mentors and managers one topic for dissertation was allotted to me. My dissertation topic was “Evaluation of Barriers in the Adoption of Hospital Information System and Electronic Medical Record in hospitals”. Then an initial draft and timeline was prepared.

Later from third week onwards I was put into a project. I started receiving project specific trainings thereon. Simultaneously I started working on my dissertation project. First I had done review of literature to understand the hospital information system and electronic medical record and then I identified some factors from the articles and according to that factors I prepared two questionnaire to conduct survey in various hospitals of Bangalore. Then I visited various hospitals and collected data and then I performed some analysis and came to a result.

This was followed by continuous reviews by my mentors at NTT Data and project manager and incorporation of their comments lead to a comprehensive and effective version of my research work.

2. Goals of Internship

1. To understand the work culture of NTT Data Services and its organizational structure.
2. To assist the administrator/manager in day-to-day operations. Through this process it is expected to gain practical knowledge and skills to handle managerial issues related to major activities of the organization.
3. To observe various protocols in the organizations and try to acquire skills to accomplish them.
4. To observe mannerism of the existing employees and learn the culture of the organization. Inculcating soft skills is an integral part of understanding the organization. Observing human skills.
5. To identify a specific problem area/areas of interest or a department (for example, human resource management, quality assurance, information system, risk management etc.) for the dissertation.
6. To diagnose critical problems within an operational area.
7. To provide the management with a set of alternative solutions, and
8. If possible, design and implement a plan to carry out the most feasible solutions.

3. About the Organization

NTT DATA is a top 10 global business and IT services provider and global innovation partner with 100,000+ professionals in more than 50 countries now with \$16B in revenue. Headquartered in Tokyo, NTT DATA puts emphasis on long-term commitment and combine global reach and local intimacy to provide premier professional services from consulting, system development to business IT outsourcing. Since 1967, NTT DATA has played an instrumental role in establishing and advancing IT infrastructure. Originally part of Nippon Telegraph and Telephone Public Corporation, its heritage contributed to social benefits with a quality-first mindset. A public company since 1995, the company builds on this proven track record of innovation by providing novel IT solutions to bring results in greater quality of life for people, communities and societies around the world.



Who we serve

- Industry-specific consulting
- Digital business services
- BPO and BPaaS
- Business intelligence, analytics and automation
- Enterprise applications and SaaS
- Application modernization, development and management
- Cloud services
- Infrastructure management, security and hosting



Who we serve

- 50+ federal agencies and military branches, 25 states and municipalities
- 50% of U.S. hospitals, top 10 health plans, millions of covered patients
- Top 25 leading financial institutions in North America
- Top 10 automotive companies worldwide
- Manufacturing customers in over 40 countries



Who we are

- 100,000+ professionals in 50+ countries
- 6,000 research professionals and dedicated R&D facilities
- 9,000 SAP professionals
- 10,000 financial services and insurance specialists
- 15,000 skilled manufacturing resources
- Trusted U.S. government partner for 50+ years



What we do

- 10th Largest in IT Services Worldwide in 2015 by Market Share* (NTT DATA)
- 7th Largest in Global Implementation Services in 2015 by Market Share Worldwide+ (NTT DATA)
- A Leader in The Forrester Wave™: North American Workplace Services, Q4 2015+ (Dell Services)
- Leader in the NelsonHall Digital Transformation Services NEAT Evaluation+* (Dell Services)
- 12th Largest in Consulting Services in 2015 by Market Share Worldwide- (NTT DATA)

NTT Group consists of major companies like Nippon Telegraph and Telephone Corporation, NTT Communications Corporation, Dimension Data plc, NTT DOCOMO, INC. and many subsidiaries all over the world. Taking advantage of this opportunity of this scale, NTT DATA achieved a number of significant successes by collaborating with NTT Group and it provided enormous creative synergy.

The goal of NTT has been to create a foundation for future business by incorporating a number of overseas companies in order to establish a framework through which they can provide their diverse services, as typical Japanese courteous service, worldwide to support their customers' needs. As one of the global innovators, NTT are always challenging more innovative business approach and enhancing their creativity by respecting diversity.

John W. McCain is the Chief Executive Officer of NTT DATA Services headquartered in Dallas, Texas, USA. He is a member of the NTT Holdings Global Strategy Committee and serves as senior vice president of NTT DATA Corporation.

Dan Allison is the President, Global Healthcare and Life Sciences. As head of the company's largest industry segment, Dan is responsible for leading the growth, profitability and transformation of the global healthcare business, which focuses on provider, physician, health plan and life sciences clients. Dan has more than 30 years of leadership experience in IT outsourcing and business process outsourcing services in various verticals, with a strong focus in healthcare.

Americas

North America

In North America, NTTDATA partnered with a range of businesses and government agencies providing a flexible array of engagement options, including consulting, managed services, outsourcing, and the cloud. Leveraging strong technical know-how, practical industry insights, and global reach, it relentlessly drives improvement across systems and processes while increasing business flexibility. The company is focused on getting faster results with less risk, so its clients can flex their businesses to respond to changing market dynamics and capitalize on growth opportunities.

Latin America

NTT DATA entered the Latin American market through the acquisition of the Value Team Group, a specialist in IT consulting and services. Today, the company provides a wide offering of customized services and end-to-end solutions. The aim is to enable customers to grow and stand out from the competition by adopting innovative IT concepts and technologies.

Europe and Middle East

Over the past few years, NTT DATA have expanded its IT service networks in Europe through the acquisition of a majority stake in intelligence, Cirquent, Value Team, Intelligence group and Keane.

NTT DATA Group offers best-in-class consulting services and enterprise solutions for industries in the manufacturing, banking, insurance, telecommunications, media, energy, retail, service and public sectors. Their consulting services range from business process consulting to conceptual design, implementation and integration, as well as the support, operation and maintenance of IT systems. Additional offerings include outsourcing, hosting and full-service solutions in the ERP environment.

APAC/ India

NTT DATA positions APAC and India region as both an emerging market and the delivery resource pool to provide cost competitive and high quality service in their global strategy. The company address both multinational corporations and local client in this region. With global capabilities, NTT DATA support multinational corporations, primarily in healthcare, insurance, automotive and electronics industries in rapidly growing APAC market. In addition, NTT DATA offer the services to local clients in both financial and public sector by leveraging our accumulated experience across the world.

NTT DATA in Healthcare

Healthcare companies are balancing the quality and cost of care while serving a rapidly aging population and rising healthcare costs. At the same time, those firms are facing escalating competition, the feared patent cliff for many blockbuster drugs, and changing regulations and standards.

NTT DATA partners with some of the world's leading healthcare organizations to help them proactively manage their business through the use of information, data, and technology. In fact, its technology-enabled services support over thousands of organizations within the sector, enabling them to rapidly and cost-effectively adjust to dynamic market and regulatory demands.

Industry Recognition

- Positioned by Gartner in the “Leaders” quadrant of the Gartner Magic Quadrant for Data Center Outsourcing and Infrastructure Utility Services, North America for the fifth consecutive year.
- Ranked “#1 IT Services Provider to Healthcare Providers,” by Gartner for the sixth straight year.
- Positioned as a leader in Everest Group's “IT Outsourcing in the Healthcare Provider Industry—Service Provider Landscape with PEAK Matrix Assessment” for a third consecutive year.

4. Key Learnings

4.1 Healthcare

The prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by the medical and allied health professions.

Healthcare Market Segment

➤ Payors

Entities other than the patient that finance and reimburse the cost of healthcare. Examples: Insurance companies, health plans, third party administrators and remuneration.

➤ Providers

Individual or an institution who provides preventive, curative, promotional and rehabilitative healthcare services to the patients. Examples: - Acute care, ambulatory care, physician's offices, hospice, home-health, medical facility/hospitals.

➤ Life Sciences and Ancillary Services

Life sciences services enable pharmaceutical, biotech and diagnostics companies to accelerate drug discovery and advance clinical trial efficiencies. Examples: - Pharmaceuticals, clinical trial, clinical data management, bio-technology, regulatory/accreditation bodies, bio-engineering.

Patient Encounters

➤ Out Patient

Patient who has a single/ recurring series of clinical appointment and stay less than 24 hours. Examples: - fever, allergic reaction, minor surgery or treatment.

➤ In Patient

Admitted for minimum 24 Hours or till the time when the admit note is generated and assigned a room or bed. Examples: - Labor and delivery, surgery etc.

➤ Emergency

Patient in need of immediate care, triaged based on medical condition and may be admitted to IP or discharged from emergency directly. Examples: - Dizziness, food poisoning, accidents etc.

Patient Life Cycle

➤ Assessment

➤ Diagnosis

➤ Treatment

➤ Rehabilitation/Discharge

➤ Follow Up

4.2 Healthcare IT

➤ Hospital Information System (HIS)

A hospital information system (HIS) is a comprehensive, integrated information system designed to manage all the aspects of a hospital operation, such as clinical, administrative, financial and ancillary services.

Aim of HIS

- To achieve best possible patient care and outcome
- To provide internal and external communications among healthcare providers
- Provides patient health information when it is needed
- To keeps patient care data secure

➤ Electronic Medical Records

An electronic medical record (EMR) is digital version of a paper chart that contains all of a patient's medical history from one practice. An EMR mostly used by providers for diagnosis and treatment. An EMR contains the standard medical and clinical data gathered in one provider's office.

Benefits of EMR

- Track data over time
- Identify patient who are due for preventive visits and screening
- Monitor how patients measure up to certain parameters, such as vaccinations and blood pressure readings
- Improve overall quality of care in a practice

➤ Interfaces

Connecting link between systems with the use of standard messaging protocols. It enables different systems for different aspects of services and build on different platforms to communicate with each other.

4.3 US Healthcare

➤ Healthcare in United State

- The United States health care system relies heavily on private health insurance, which is the primary source of coverage for most Americans. According to the CDC, approximately 58% of Americans have private health insurance.

- The primary public programs are Medicare and Medicaid. 60–65% of healthcare provision and spending comes from programs such as Medicare, Medicaid Insurance Program.
- Most of the population under 67 is insured by their or a family member's employer, some buy health insurance on their own, and the remainder are uninsured.
- Health insurance for public sector employees is primarily provided by the government

➤ **Role of Government- Health and Laws**

Federal Government

Department of Health and Human Services (HHS) is the US principal agency involved in:

- Medical and social science research
- Preventing outbreak of infectious disease including immunization services
- Assuring food and drug safety
- Medicare & Medicaid
- Comprehensive Health services for the Americans
- Improving maternal and infant health

State Government

- State Insurance Department is the basic agency involved to
- Enforce health insurance laws
- Provide information for making-informed insurance buying decisions
- License and regulate health insurance companies for operations
- Review policy form filings for compliance and conformance
- Provide optimum consumer protection and resolving insurance disputes

➤ **Public Health Coverage**

- Medicare
- Medicaid
- TRICARE
- CHIP (Children's Health Insurance Program)

➤ **Private Health Coverage- Managed Care Plans**

- HMO (Health Maintenance Organization)
- PPO (Preferred Provider Organization)

- POS (Point of Service)

➤ **Healthcare Laws and Accreditation**

- HIPAA (Health Insurance Portability and Accountability Act)
- ARRA- HITECH Act (American Recovery and Reinvestment Act- Health Information Technology for Economic and Clinical Health Act)
- ACO (Accountable Care Organization)
- RHIO (Regional Health Information Organization)
- NHIN (Nationwide Health Information Network)
- JCI (Joint Commission International)
- COBRA (Consolidated Omnibus Budget Reconciliation Act)
- Workmen's Compensation Act

4.4 Applications

Cerner

The Cerner electronic medical record (EMR) is an integrated database that provides a comprehensive set of capabilities. Cerner created it to allow healthcare professionals to electronically store, capture and access patient health information in both the acute and ambulatory care setting.

Cerner EMR software allows you to:

- Provide real-time access to patient results and clinical information across care disciplines
- Enable that healthcare organizations meet The Joint Commission requirements for patient confidentiality
- Access patient information securely from wherever and whenever it is most convenient for the care team

Key Benefits:

- Improve patient care as clinicians can focus on the patient's overall health and not just the encounter
- Increase efficiency by placing real-time, updated information with the care team in time to make fast and effective decisions

- Increase access to information from multiple venues in the health system

Cerner has different EMR software solutions for various hospital and health system specialties, such as:

- Acute Care Electronic Medical Record
- CPOE
- Cardiovascular
- Clinical Imaging
- Community Hospitals
- Critical Access Hospitals
- Critical Care
- Document Imaging
- Emergency Department
- Knowledge Solutions
- Laboratory
- Oncology
- Point of Care
- Quality and Performance Improvement
- Radiology
- Reporting and Outcomes
- Revenue Cycle
- Technologies
- Women's Health
- Workforce Solution

Meditech

Meditech offers software for health care organizations of various types and sizes. Some of the software modules offered by Meditech include the following: Health Information Management, Revenue Cycle, Scanning and Archiving, Scheduling and Referral

Management, Emergency Department Management, Cost Accounting, Data Repository, General Accounting, Human Resource Planning, Supply Chain Management, Operating Room Management, Patient Discharge Instructions, Long Term Care Solutions, Behavioral Health Solutions, and Home Health Solutions.

Some other developments include:

- Working with partners and other companies to provide new technology solutions in the areas of business continuance, identity management, and RFID
- Incorporating evidence-based medicine into practice through integration with Zynx Health, Inc.
- The development of a new Oncology product to better manage the complex needs of Oncology departments
- Expanding medication management capabilities to include e-prescribing and medication reconciliation from Dr First, Inc.
- Offering standard interoperability suites to help customers transition to emerging EHR standards

McKesson

Paragon and HPF (Horizon Patient folder) and Radiology solutions of McKesson were made the complete Hospital Information System. It is mainly used for large hospital more than 500 beds. McKesson's EHR solutions offer practices both cloud and server-based solutions designed to help enhance care quality and improve physician workflow.

Paragon brings these advantages:

- **Helps reduce system complexity and lowered cost of ownership:** Designed around a technology platform that helps reduce system operational complexity via a fully integrated clinical and financial system, a modern, non-proprietary operating platform and a Microsoft® SQL server platform.
- **Easy-to-use, comprehensive software applications:** Paragon offers a broad suite of clinical and financial applications with anytime, anywhere access via the web.
- **Single vendor for all your clinical and financial needs:** With Paragon, we provide hospitals and health systems a unique advantage—a single vendor partnership for all of your clinical and financial operations to help you navigate the health care landscape

while efficiently maximizing the clinical and financial performance of your organization both today and tomorrow.

- **Microsoft® technology and architecture throughout:** By using a single, fully-normalized Microsoft® SQL database as its core architecture, Paragon simplifies data management.
- **Strength and commitment of McKesson as your health care partner:** McKesson provides strength, stability and resources unmatched in the health care industry. Our Better Health 2020™ initiative leverages our knowledge and experience across every aspect of health care to help you use IT more strategically for better connectivity, better business health and provide better patient care as health care reform unfolds.

NextGen

It supported ambulatory practices with technology, services, and expertise to drive better results – financially, clinically, and operationally – across their practice.

NextGen Healthcare's products include:

- NextGen Ambulatory EHR (Electronic Health Record): The NextGen EHR is primarily a single, all-encompassing database that combines user management, EHR and EPM. This database can run under MS SQL Server 2005, 2008 or Oracle.
- NextGen Practice Management
- NextGen Inpatient Clinicals
- NextGen Inpatient Financials
- NextGen Patient Portal
- NextGen Health Information Exchange (HIE)
- NextGen Health Quality Measures

NextGen Healthcare's services include:

- Revenue Cycle Management (RCM)
- NextGen EDI Services
- Next Guard Data Protection