Healthcare IT Market to 2017 - Electronic Medical Records and Radiology Information Systems to Drive Future Growth

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The global healthcare IT market is forecast to grow at a Compound Annual Growth Rate (CAGR) of XX% to $XX billion in 2017.

Global Healthcare IT Market to Reach $XX Billion in 2017

Global Healthcare IT, Revenue ($bn) Forecast 2010-2017

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<th>Year</th>
<th>Hospital Information Systems</th>
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<th>Total Revenue ($bn)</th>
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Source: GBI Research, Company Annual Reports, Investor Presentations, Interviews with Industry Experts and Key opinion Leaders

The global healthcare IT market is forecast to grow at a Compound Annual Growth Rate (CAGR) of XX% to $XX billion in 2017. The ongoing implementation of Hospital Information Systems (HIS) will continue to drive the market in the future. Emerging economies and Asia-Pacific countries such as South Korea and Taiwan will be the main drivers for the market. Healthcare providers can now benefit from funding of up to $XX billion if they demonstrate ‘meaningful use’ of IT healthcare, although fears of a ‘funding cliff’ in 2013 will result in companies investing less, or increasingly looking towards countries such as India and China for growth.

Cloud Computing Technology an Upcoming Trend in Healthcare IT

Cloud computing is increasingly being seen as the next big development in healthcare IT. In practical terms, cloud computing allows data to be stored locally on servers that are not owned by the company and thus do not require their own server room, saving both space and money. According to the Certification Commission for Healthcare Information Technology (CCHIT), there are several hundred vendors currently offering some form of Electronic Medical Records (EMR) in the cloud. In return for a fee the EMR vendor hosts and manages the hospital’s software and technology infrastructure. The software delivery model Software as a Service is an additional benefit provided by the EMR vendor.
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2 Introduction

Information technology has improved efficiency and quality for a number of industries, and plays a key role in healthcare. Doctors, diagnostic equipment and hospitals generate a large amount of information in the care of patients. Managing that information and using it productively poses a continuing challenge, particularly in the light of the complexity of global healthcare systems. The term healthcare IT, or information technology, generally refers to computer applications used in medical practice. They may include computerized entry systems for physicians to order tests or medication, support systems for clinical decision making, and electronic medical prescriptions. The global healthcare IT market comprises two categories: Hospital Information Systems (HIS) and Medical Imaging Information Systems (MIIS). This report covers quantitative and qualitative information on the global healthcare IT market and provides market data and the future outlook.

2.1 GBI Research Report Guidance

- The report begins with an executive summary capturing the key categories and factors driving and restraining the growth of the global healthcare IT market. This chapter also outlines the main categories and market players.

- Chapter three provides an introduction to healthcare IT with an overview of the devices used.

- Chapter four provides information on the market size for the historic period 2003-2010 and from 2010-2017 with information related to market trends and market dynamics. In the market dynamics section comprehensive information is provided on key market drivers and restraints. The competitive landscape for the overall healthcare IT market and segment level is also provided.

- Chapter five includes details at the category level of the healthcare IT market. The market size for the historic period (2003-2010) and the forecast period (2010-2017) are discussed for each category, along with market dynamics and competition.

- Chapter six comprises country analyses and forecasts. Historic (2003-2010) and forecast (2010-2017) information on the global healthcare IT market is provided for the US, the UK, Canada, France, Germany, Spain, Italy, Brazil, Australia, India, China and Japan.

- Chapter seven describes the opportunities that exist in the market for new technologies and discusses the risks that the healthcare IT industry will face in the near future.

- Chapter eight focuses on a competitive assessment of the market, with profiles of the leading healthcare IT companies and details about their product portfolio.

- Chapter nine focuses on the deals that have taken place in the healthcare IT industry from 2007 to 2011, with key deals explained in terms of deal overview and strategic rationale.
5.6 **Healthcare IT, Global, Medical Imaging Information Systems, Revenue ($m), 2010-2017**

Figure 11: Healthcare IT Market, Medical Imaging Information Systems, Revenue ($m), 2010-2017

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<td>Picture Archiving and Communication Systems</td>
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<td>Medical Imaging Information Systems</td>
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Source: GBI Research, Company Annual Reports, Investor Presentations, Interviews with Industry Experts and Key Opinion Leaders
5.7 Global Healthcare IT, Medical Imaging Information Systems, Company Share, 2010

Figure 12: Global Healthcare IT, Medical Imaging Information Systems, Company Share (%), 2010

Source: GBI Research, Company Annual Reports, Investor Presentations, Interviews with Industry Experts and Key Opinion Leaders

Table 9: Global Healthcare IT, Medical Imaging Information Systems, Company Share (Revenue ($m), 2010)

<table>
<thead>
<tr>
<th>Company Name</th>
<th>2010</th>
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<tr>
<td>GE Healthcare</td>
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<tr>
<td>Philips Healthcare</td>
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<tr>
<td>FUJIFILM Holdings Corporation</td>
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<td>Agfa-Gevaert N.V.</td>
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<td>McKesson Corporation</td>
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<tr>
<td>Siemens Healthcare</td>
<td></td>
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<tr>
<td>Carestream Health, Inc./Kodak Health Group</td>
<td></td>
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<tr>
<td>Fujitsu Limited</td>
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<tr>
<td>Others</td>
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Source: GBI Research, Company Annual Reports, Investor Presentations, Interviews with Industry Experts and Key Opinion Leaders
6.2 Healthcare IT Market, The US, Revenue ($m), 2010-2017

The healthcare IT market in the US is forecast to grow at a CAGR of XX% from 2010 to $XX billion in 2017. EMR adoption along with cost and life saving healthcare IT products such as CPOE and CDSS will be the main drivers of growth. Government incentives under ARRA (2011-2013) will see increased adoption of HIS products during this period, as well as from 2013. The increased adoption of healthcare IT products will showcase the benefits of electronic recordkeeping and safety through electronic prescriptions.
10 Appendix

10.1 Definitions

10.1.1 Hospital Information Systems

HIS include software and system applications used in the administrative and clinical departments of various healthcare delivery organizations, such as hospitals, clinics and emergency centers. A HIS can be defined as a comprehensive, integrated information system designed to manage the administrative, financial and clinical aspects of a hospital. They include a variety of integrated software applications such as EMR, CDSS, PIS, LIS used to streamline clinical work, thereby improving the quality of patient care. Financial and administrative information systems have not been covered in this category.

10.1.1.1 Clinical Decision Support Systems

CDSS assist physicians and healthcare professionals with decision-making. It uses two or more items of a patient’s health history to generate case-specific advice. These systems use pre-established rules and guidelines which incorporate clinical data from various sources to generate alerts and treatment suggestions.

10.1.1.2 Electronic Medical Records

EMR is used by healthcare organizations to store and share patient information. It ensures privacy and confidentiality, facilitates access to patient information, decreases the possibility of errors, and lowers associated costs by improving the quality of care. EPR, EMR and CPR are synonymous. Billing information solutions and PHR are not included in this segment. EMR includes hospital/enterprise EMR, ambulatory EMR and CPOE.

10.1.1.3 Emergency Department Information Systems

An emergency department information system helps emergency department clinicians and staff to manage each phase of the patient flow and the patient documentation process, such as triage, tracking, nursing and physician charting, disposition, charge capture, and management reporting.

10.1.1.4 Laboratory Information Systems

LIS assist with receiving, processing, and storing information generated by medical laboratory processes. The LIS is used in inpatient and outpatient settings and is typically designed to support both. LIS are designed to facilitate patient check in, order entry, specimen processing, result entry, result reporting and patient demographics.

10.1.1.5 Perinatal Information Systems

Perinatal information systems are used to manage the clinical care services provided by the labor and delivery department, Intensive Care Unit (ICU), neonatal ICU, and pediatric ICU. It provides a database for planning, reliable local statistics, training perinatal health staff, a record of data of legal importance and assists in performing epidemiologic research.

10.1.1.6 Perioperative Information Systems

Perioperative information systems are operating room applications that provide clinical documentation and management of relevant real time surgery procedures from a nurse’s and anesthesiologist’s perspective. It includes clinical order management, decision support, anesthesia documentation and integration to anesthesia systems.

10.1.1.7 Pharmacy Information Systems

PIS store, manipulate and retrieve information for planning, organizing, directing and controlling administrative activities associated with the provision and utilization of clinical pharmacy services.
10.1.2 Medical Imaging Information Systems

MIIS are used in large hospitals and diagnostic imaging centers to store, retrieve, modify and forward images and information to various hospital departments or imaging centers in the network. They include PACS, CIS and RIS.

10.1.2.1 Cardiology Information Systems

CIS is a centralized system for scheduling physician reports and case reports. It provides all or some of the following features: order processing, image and ECG tracing storage, permanent patient history maintenance, transcribing and distributing results, clinical documentation, appointment scheduling, and management reporting.

10.1.2.2 PACS

PACS is used in large hospitals and diagnostic imaging clinics to store, retrieve, modify and transmit patient digital images over the network to various departments in a hospital or to a different healthcare delivery organization within the network. A PACS system comprises computers and servers used for the storage and retrieval of patient images.

10.1.2.3 RIS

A RIS is used in hospitals and diagnostic imaging clinics for patient registration, scheduling, patient tracking, result reporting and image tracking. RIS is integrated with HIS and PACS in large hospitals to expedite and improve patient care. This segment includes standalone RIS solutions.

10.2 Acronyms

ADE: Adverse Drug Event
ARHQ: Agency for Healthcare Research and Quality
ARRA: American Recovery and Reinvestment Act
CAGR: Compound Annual Growth Rate
CAPD: Computer-Assisted Physician Documentation
CCHIT: Commission for Healthcare Information Technology
CDA: Clinical Document Architecture
CDSS: Clinical Decision Support Systems
CHIMA: Chinese Hospital Association Information Management Committee
CIS: Cardiology Information Systems
CLU: Clinical Language Understanding
COCIR: European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry
CPOE: Computerized Physician Order Entry
CPR: Computerized Patient Records
DICOM: Digital Imaging and Communications in Medicine
DMP: Dossier Medical Personnel
DoE: Department of Energy
EHRi: Electronic Health Record Infrastructure
EMR: Electronic Medical Records
EPR: Electronic Patient Records
EU: European Union
FDA: Food and Drug Administration
GDP: Gross Domestic Product
HHS: Health and Human Services
HIDES: Health Information Data Exchange Systems
HIE: Hospital Information Exchanges
HIMSS: Healthcare Information and Management Systems Society
HIPAA: Health Insurance Portability and Accountability Act
HITECH: Health Information Technology for Economic and Clinical Health
HIS: Hospital Information Systems
HL7: Health Level Seven
HMIS: Healthcare Management Information Systems
iEHR: interoperable Electronic Health Record
ICU: Intensive Care Unit
IoM: Institute of Medicine
LIS: Laboratory Information Systems
MIIS: Medical Imaging Information Systems
MIP/MPR: Maximum Intensity Projection/Multi-Planar Reformat
NEHTA: National E-Health Transition Authority
NERSA: National Electricity Regulator of South Africa
NHS: National Health Service
NPfIT: National Program for Information Technology
NYSE: New York Stock Exchange
PACS: Picture Archiving and Communication Systems
PC: Personal Computer
PCEHR: Personally Controlled Electronic Health Record
PHI: Protected Health Information
PHR: Patient Health Records
PIS: Pharmacy Information Systems
QA: Question Answering
RFID: Radio Frequency Identification
RHIO: Regional Health Information Organizations
RIS: Radiology Information Systems
ROI: Return on Investment
THQIT: Transforming Healthcare Quality through Information Technology
VOIP: Voice Over Internet Protocol

10.3 Research Methodology

GBI Research’s dedicated research and analysis teams consists of experienced professionals with a pedigree in marketing, market research, consulting background in the medical devices industry and advanced statistical expertise.

GBI Research adheres to the Codes of Practice of the Market Research Society (www.mrs.org.uk) and the Society of Competitive Intelligence Professionals (www.scip.org).

All GBI Research databases are continuously updated and revised. The following research methodology is followed for all databases and reports.
10.3.1 Secondary Research

The research process begins with exhaustive secondary research on internal and external sources being carried out to source qualitative and quantitative information relating to each market. The secondary research sources that are typically referred to include, but are not limited to:

- Company websites, annual reports, financial reports, broker reports, investor presentations and SEC filings.
- Industry trade journals, scientific journals and other technical literature.
- Internal and external proprietary databases.
- Relevant patent and regulatory databases.
- National government documents, statistical databases and market reports.
- Procedure registries.
- News articles, press releases and web-casts specific to the companies operating in the market.

10.3.2 Primary Research

GBI Research conducts hundreds of primary interviews a year with industry participants and commentators in order to validate its data and analysis. A typical research interview fulfills the following functions:

- It provides first-hand information on the market size, market trends, growth trends, competitive landscape, future outlook;
- Helps in validating and strengthening the secondary research findings;
- Further develops the analysis team’s expertise and market understanding.

Primary research involves e-mail correspondence, telephone interviews as well as face-to-face interviews for each market, category, segment and sub-segment across geographies.

The participants who typically take part in such a process include, but are not limited to:

- Industry participants: CEOs, VPs, marketing/product managers, market intelligence managers and national sales managers;
- Hospital stores, laboratories, pharmacies, distributors and paramedics;
- Outside experts: investment bankers, valuation experts, research analysts specializing in specific medical equipment markets;
- Key opinion leaders: physicians and surgeons specializing in different therapeutic areas corresponding to different kinds of medical equipment.

10.3.3 Models

Where no hard data is available GBI Research uses modeling and estimates in order to produce comprehensive data sets. The following rigorous methodology is adopted:

Available hard data is cross referenced with the following data types to produce estimates:

- Demographic data: population, split by segment;
- Macro-economic indicators: GDP, inflation rate;
- Healthcare Indicators: health expenditure, physicians base, healthcare infrastructure and facilities;
- Selected epidemiological and procedure statistics.

Data is then cross checked by the expert panel.

All data and assumptions relating to modeling are stored and are available to clients on request.
10.3.4 Forecasts

GBI Research uses proprietary forecast models. The following four factors are utilized in the forecast models:

- Historic growth rates;
- Macro indicators such as population trends and healthcare spending;
- Forecast epidemiological data;
- Qualitative trend information and assumptions.

Data is then cross checked by the expert panel.

10.3.5 Expert Panels

GBI Research uses a panel of experts to cross verify its databases and forecasts.

GBI Research’s expert panel comprises marketing managers, product specialists, international sales managers from medical device companies; academics from research universities, KOLs from hospitals, consultants from venture capital funds and distributors/suppliers of medical equipment and supplies.

Historic data and forecasts are relayed to GBI Research’s Expert Panel for feedback and adjusted in accordance with this feedback.

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10.6 Sources

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European Commission (EC)
The UK National Health Service (NHS)
The Department of Human and Health Services (HHS)
The US Institute of Medicine (IOM)
Center for Medicare and Medicaid Services (CMS)
Healthcare Information and Management Systems Society (HIMSS)
European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry
(COCIR)
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Cerner Corporation
Allscripts Healthcare Solutions
iSOFT Group Limited
McKesson Corporation
Fujitsu Limited
NEC Corporation
TietoEnator Corporation
CompuGroup Medical AG
Athena health
CISCO Systems
Intel Corporation
Microsoft Corp
DELL (Perot Systems)
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