#### **CHAPTER ONE: EXECUTIVE SUMMARY**

Healthcare Industry Scope and Methodology Size and Growth of the Market Issues Facing the IT Healthcare Market Competitor

#### **CHAPTER TWO: INTRODUCTION**

Healthcare Industry

The United States Healthcare Market

European Healthcare Markets

Asia-Pacific Healthcare Markets

Healthcare Establishments

Hospitals

U.S. Hospital Chains

Consolidation in the Industry

Handheld Device Technology Adoption in Hospitals

**Physicians** 

Number of Physicians

Handheld Device Technology Adoption by Physicians

**Nursing Homes** 

Handheld Device Technology Adoption by Nursing Homes

Pharmacies

Handheld Device Technology Adoption by Pharmacies

The Value Chain of the Healthcare Industry

**Demographic Trends** 

**US** Demographics

Population Over Age 65

World Demographics

### **CHAPTER THREE: INDUSTRY TRENDS**

Overview

**Industry Challenges** 

Emphasis on Reducing Hospital Care Days

Decreasing Healthcare Resources

**Nursing Shortage** 

**Capacity Constraints** 

Health Information Technology and American Investment and Recovery Act of 2009

(ARRA)

Meaningful Use

Industry Initiatives to Meet Meaningful Use Requirements

Bar Code Label Requirements and Technology Demands

'Cloud' Technology

Hospitals' Primary Focus: Improve Patient Care

#### **CHAPTER FOUR: PRODUCTS AND COMPETITORS**

Overview

**Patient Monitoring Devices** 

Telemedicine

**Patient Monitoring Applications** 

**Blood Pressure Monitors** 

Growth Factors and Benefits of Hand Held Blood Pressure Monitors

**Industry Challenges for Implementation** 

**Pulse Oximeters** 

ECG/EKG

Ultrasound

**Fetal Heart Monitors** 

**Diabetes Monitors** 

**Prothrombin Time Monitors** 

**TENS/EMS Devices** 

New Developments and Trends

MelaFind Melanoma Detection Imaging System

JM-103 Jaundice Meter

Handheld Patient Monitoring Market Summary

**Competitor Summary** 

Administrative Devices

PDAs and Smartphones

**Defining Smartphones and PDAs** 

Uses of Healthcare PDAs

Benefits of Healthcare PDAs

Challenges in the Implementation of PDAs in Healthcare Settings

New Developments and Trends

Tablet PCs

**EMR Software** 

E-prescription Software

New Developments and Trends

Inventory Scanners and Medication Management Devices

Benefits of Handheld Inventory/Medication Devices

Challenges in the Implementation of Handheld Inventory/Medication Devices

New Developments and Trends

Handheld Healthcare Administrative Device Market Summary

**Competitor Summary** 

### **CHAPTER FIVE: MARKET OVERVIEW**

Total Market Size and Growth

Market by Geographical Region

Market Drivers and Inhibitors Growth Drivers Emerging Trends

## CHAPTER SIX: IMPLEMENTATION OF HANDHELD DEVICES: TECHNOLOGY BEHIND HANDHELD DEVICES

Overview

Overview of Wireless Technologies

Wireless Personal Area Network - Bluetooth

Wireless Personal Area Network - RFID

Wireless Personal Area Network - ZigBee

Wireless Personal Area Network - UWB

Wireless Local Area Network (WLAN)

Wireless Metropolitan Area Network (WMAN)

Wireless Wide Area Network (WWAN)

Examples of Implemented Technologies

Bethesda Children's Hospital—Meadville, Pennsylvania

George Washington University Hospital—Washington D.C.

Good Samaritan Hospital—Vincennes, Indiana

Meridian Health—New Jersey

Mount Sinai Hospital and the University Health Network (UHN)—New York, New York

OSU Medical Centre—Ohio

Sentara Healthcare—Norfolk, Virginia

St. Clair Hospital—Pittsburgh, Pennsylvania

St. Vincent's Hospital—Birmingham, Alabama

The Whole Child Pediatrics P.S.C.—Florence, Kentucky

Therapy Partners—Ontario, Canada

## **CHAPTER SEVEN: COMPETITOR PROFILES**

Overview

Apple, Inc.

Company Overview

Performance Review

**Products and Services** 

Growth Strategy

New Development

Locations

Draeger Medical, Inc.

Company Overview

Performance Review

**Products and Services** 

**Growth Strategy** 

New Development

Locations

GE Healthcare

Company Overview

Performance Review

Key Acquisitions, Alliances, and Partnerships

Products and Services

**Growth Strategy** 

New Development

Locations

Global Media Group, LLC

Company Overview

Products and Services

Key Acquisitions, Alliances, and Partnerships

**Growth Strategy** 

**Hewlett Packard Corporation** 

Company Overview

Performance Review

Key Acquisitions, Alliances, and Partnerships

**Products and Service** 

**Growth Strategy** 

New Developments

Locations

Medtronic, Inc.

Company Overview

Performance Review

Key Acquisitions, Alliances, and Partnerships

Products and Service

**Growth Strategy** 

New Developments

Locations

**Omron Corporation** 

Company Overview

Performance Review

Products and Service

**Growth Strategy** 

New Developments

Locations

Research in Motion Ltd.

Company Overview

Performance Review

Key Acquisitions, Alliances, and Partnerships

Products and Services

**Growth Strategy** 

New Development

Locations

Siemens Healthcare

Company Overview

Performance Review

Key Acquisitions, Alliances, and Partnerships

**Products and Service** 

Growth Strategy

New Developments

Locations

Socket Mobile, Inc.

Company Overview

Performance Review

Key Acquisitions, Alliances, and Partnerships

**Products and Service** 

**Growth Strategy** 

New Developments

Locations

Welch Allyn, Inc.

Company Overview

Performance Review

Key Acquisitions, Alliances, and Partnerships

Products and Service

Locations

## LIST OF COMPANIES

#### REGULATORY AUTHORITIES AND ORGANIZATIONS

#### LIST OF EXHIBITS

#### **CHAPTER ONE: EXECUTIVE SUMMARY**

Table 1-1: The Global Market for Handheld Healthcare Devices 2007-2016

Figure 1-1: The Global Market for Handheld Healthcare Devices 2007-2016

## **CHAPTER TWO: INTRODUCTION**

Table 2-1: Total Healthcare Expenditures as a Percent of GDP by Country 1990, 2000 and 2008

Figure 2-1: Total Healthcare Expenditures as a Percent of GDP by Country 1990, 2000, and 2007

Figure 2-2: By Sector Contribution to the U.S. GDP

Figure 2-3: The U.S. Healthcare Spending (1960-2015)

Table 2-2: U.S. Registered Hospitals by Type, 2010

Figure 2-4: Number of Hospitals in the US, 1975-2005, Estimated 2015

Table 2-3: Select For-Profit U.S. Hospital Chains, 2010 Data

Figure 2-5: Number of Hospital Mergers in the US, 1998-2007

Figure 2-6: Number of Physician Offices, 2000-2009

- Figure 2-7: Number of Nursing Homes, 2000-2009
- Figure 2-8: Number of Pharmacies and Drug Stores, 2000-2009
- Figure 2-9: Value Chain of the Healthcare Industry
- Table 2-4: The U.S. Population, 1980-2020
- Figure 2-10: The US Population, 1980-2020
- Table 2-5: Percent U.S. Population Over Age 65 by Year
- Figure 2-11: Estimated Population by Age Group, 2000 and 2050
- Table 2-6: The World Population, 1980-2020
- Figure 2-12: The World Population, 1980-2020

#### **CHAPTER THREE: INDUSTRY TRENDS**

- Figure 3-1: Estimated Implementation of IT-related Technologies and Applications in
- Developed Regions, (includes both completed and in-progress systems)
- Figure 3-2: IT Priorities of Healthcare Organizations in the US, 2005-2008
- Figure 3-3: Percent of U.S. Hospitals Citing Factor as Number One Reasons for ED
- Diversion, Current Survey March 2010
- Table 3-1: Stage 1 Criteria for Meaningful Use
- Figure 3-4: Percent of Organizations that Expect to Qualify for Meaningful Use in 2011 or 2012
- Figure 3-5: Investment in ARRA, 2010-2011
- Figure 3-6: Distribution of Fatal Prescribing Errors
- Figure 3-7: Electronic vs. Paper Prescription Ordering, 2010-2011
- Figure 3-8: Key Business Objectives, Healthcare Facilities, 2009-2010

## **CHAPTER FOUR: PRODUCTS AND COMPETITORS**

- Table 4-1: Select Handheld Patient Monitoring Systems Current as of December 2011
- Table 4-2: The Market for Handheld Patient Monitoring Devices Estimated Products Sales by Product Type, 2011
- Figure 4-1: The Market for Handheld Patient Monitoring Devices Estimated Products Sales by Product Type, 2011
- Table 4-3: Select Handheld Administrative Devices Current as of December 2011
- Table 4-4: Percent of Office-based Physicians Using EMR/EHR, 2001-2011
- Table 4-5: The Market for Handheld Healthcare Administrative Devices Estimated Products Sales by Product Type (Blood pressure devices, Pulse oximeters, ECG/EKG monitors, Ultrasound, Diabetes insulin monitors, Prothrombin time monitors, TENS, Fetal heart monitors), 2011
- Figure 4-2: The Market for Handheld Healthcare Administrative Devices Estimated Products Sales by Product Type (Blood pressure devices, Pulse oximeters, ECG/EKG monitors, Ultrasound, Diabetes insulin monitors, Prothrombin time monitors, TENS, Fetal heart monitors), 2011
- Figure 4-3: Suppliers' Share of the Handheld Administrative Device Market for Healthcare, Estimated 2011

#### CHAPTER FIVE: MARKET OVERVIEW

- Table 5-1: The Global Market for Handheld Healthcare Devices by Segment 2007-2016
- Figure 5-1: The Global Market for Handheld Healthcare Devices by Segment 2007-2016
- Figure 5-2: The Global Market for Handheld Healthcare Devices by Segment 2011
- Table 5-2: The Market for Handheld Healthcare Devices Estimated Products Sales by Geographic Region, 2007-2016
- Figure 5-3: The Market for Handheld Healthcare Devices Market Share by Geographic Region, 2011
- Figure 5-4: U.S. Healthcare Spending, 2000-2015
- Figure 5-5: Age-wise Population Distribution, 1980-2020
- Figure 5-6: Ambulatory Care Visits to Physicians' Office and Hospital Outpatient and
- Emergency Departments by Age, 2000-2020e
- Figure 5-7: Demand-Supply Gap for Nurses in the US, 2000-2020 (in thousands)
- Figure 5-8: Demand-Supply Gap for Physicians in the U.S., 2005-2025
- Figure 5-9: Most Significant Barriers to Implementing IT, 2011

# CHAPTER SIX: IMPLEMENTATION OF HANDHELD DEVICES: TECHNOLOGY BEHIND HANDHELD DEVICES

- Figure 6-1: Wireless Networking Technologies
- Figure 6-2: Range of Wireless Networking Technologies

### **CHAPTER SEVEN: COMPETITOR PROFILES**

- Table 7-1: Corporate Details of Apple, Inc.
- Table 7-2: Financial Details of Apple, Inc 2008-2011 (\$millions)
- Figure 7-1: Apple, Inc Revenues 2008-2011 (\$millions)
- Figure 7-2: Apple-funded Research and Development Expenditures 2008-2011 (\$millions)
- Table 7-3: Corporate Details of Draeger Medical, Inc.
- Table 7-4: Financial Details of Draeger AG 2008-2011 (\$millions)
- Figure 7-3: Draeger AG Revenues 2008-2011 (\$millions)
- Table 7-5: Corporate Details of General Electric Company
- Table 7-6: Financial Details of GE Corporation 2008-2011 (\$millions)
- Figure 7-4: GE Healthcare Revenues 2008-2011 (\$millions)
- Figure 7-5: GE-funded Research and Development Expenditures 2008-2011 (\$millions)
- Table 7-7: Corporate Details of Global Media
- Table 7-8: Corporate Details of Hewlett Packard
- Table 7-9: Financial Details of Hewlett Packard 2008-2011 (\$millions)
- Figure 7-6: Hewlett Packard's Revenues 2008-2011 (\$millions)
- Table 7-10: Corporate Details of Medtronic Inc.
- Table 7-11: Financial Details of Medtronic 2008-2011 (\$millions)
- Figure 7-7: Medtronic's Revenues 2008-2011 (\$millions)
- Figure 7-8: Medtronic's Research and Development Expenditures 2008-2011 (\$millions)
- Table 7-12: Corporate Details of Omron Corporation
- Table 7-13: Financial Details of Omron Corporation 2008-2011 (\$millions)

- Figure 7-9: Omron Corporation Revenues 2008-2011 (\$millions)
- Figure 7-10: Omron Corporation Research and Development Expenditures 2008-2011 (\$millions)
- Table 7-14: Corporate Details of Research In Motion Limited
- Table 7-15: Financial Details of Research In Motion Limited 2008-2011 (\$millions)
- Figure 7-11: Research In Motion Revenues 2008-2011 (\$millions)
- Figure 7-12: Research In Motion Research and Development Expenditures 2008-2011 (\$millions)
- Table 7-16: Corporate Details of Siemens Healthcare
- Table 7-17: Financial Details of Siemens Healthcare 2008-2011 (\$millions)
- Figure 7-13: Siemens Healthcare Revenues 2008-2011 (\$millions)
- Figure 7-14: Siemens AG Research and Development Expenditures 2008-2011 (\$millions)
- Table 7-18: Corporate Details of Socket Mobile
- Table 7-19: Financial Details of Socket Mobile 2008-2011 (\$millions)
- Figure 7-15: Socket Mobile Revenues 2008-2011 (\$millions)
- Figure 7-16: Socket Mobile's Research and Development Expenditures 2008-2011 (\$millions)
- Table 7-20: Corporate Details of Welch Allyn

# APPENDIX: LIST OF COMPANIES REGULATORY AUTHORITIES AND ORGANIZATIONS