Structural Health Monitoring (SHM) Market by Technology, by Solution Type, by Application, and by Geography - Global Trend & Forecast to 2020

Description:

Structural health monitoring (SHM) is a system that provides in-time and accurate information regarding performance and condition of structures. Information from SHM systems aid in planning and designing maintenance activity, thereby increase safety, reduce uncertainty, and lowers operating expenses. SHM can be used in physical structure such as bridges, dams, tunnels, buildings, stadiums, and others.

Globally, civil infrastructure is facing aging problem as most of the civil infrastructure such as bridges, dams, and others were built after the World War II (WWII). This infrastructure requires the proper inspection and monitoring, which shall act as a driving factor for the growth of SHM market. Similarly, the government support for research and development in the field of SHM and rising importance of accessing the impact of extreme weather conditions on the civil infrastructure foster the growth of the SHM market. High SHM cost and alternate method for monitoring are acting as restraining factors in the growth of SHM.

The Structural health monitoring market is expected to be worth USD 1.89 Billion by 2020, at a CAGR of 24.7% between 2015 and 2020. Bridges are leading the SHM market. Advitam Inc. (France), COWI A/S (Denmark), Digitexx Data Systems, Inc. (U.S.), Geocomp Corp. (U.S.), GeoKon, Inc. (U.S.), GeoSig Ltd. (Switzerland), Hottinger Baldwin Messtechnik GmbH (Germany), Nova Metrix LLC, (U.S.), SODIS LAB (Russian Federation), and Strainstall UK Limited (U.K.) are the players of the SHM market.

This report describes the value chain for the SHM sensor market by considering all the major stakeholders in the market and their roles in the analysis. The report also provides a detailed study of the Porter's five forces analysis of the same market. All five major factors in these markets have been quantified by using the internal key parameters and also governing each of them. It covers a brief description of the major players that are active in the SHM market and also covers the competitive landscape of these players, including their key growth strategies and recent developments.

The report covers the market data and information regarding the market drivers, trends, and opportunities, key players, and competitive outlook. This report also provides tables which provide data about the various subsegments. In addition, it profiles major companies involved in the SHM market, which include their overview, products and services, financials, strategies, SWOT analysis, and recent developments.

Scope of the Report

This research report categorizes the Structural health monitoring market, based on technology, solution type, application, and geography.

Based on Technology

The Structural health monitoring market has been segmented on the basis of technology which includes wired and wireless SHM technology.

Based on Solution Type

The SHM market has been also segmented based on solution type into two subsegments, namely, Hardware and software & services.

Based on Application

SHM market has been segmented on the basis of application such as bridges, dams, tunnels, buildings, stadiums, and others.

Based on Geography

Geographically, the SHM market has been segmented into North America (U.S., Canada, and Mexico), Europe (Germany, the U.K., France, and others), APAC (China, Japan, Singapore, South Korea, and others),
and the Rest of the World (Australia, Africa, the Middle East, and others).

Contents:

1 Introduction
  1.1 Study Objectives
  1.2 Market Definition
  1.3 Study Scope
    1.3.1 Markets Covered
    1.3.2 Geographic Scope
    1.3.3 Years Considered For The Study
  1.4 Currency
  1.5 Limitations
  1.6 Stakeholders

2 Research Methodology
  2.1 Research Data
    2.1.1 Secondary Data
      2.1.1.1 Key Data From Secondary Sources
    2.1.2 Primary Data
      2.1.2.1 Key Data From Primary Sources
      2.1.2.2 Key Industry Insights
      2.1.2.3 Breakdown Of Primary Interviews
    2.2 Factor Analysis
      2.2.1 Introduction
      2.2.2 Demand-Side Indicators
        2.2.2.1 Aging Infrastructure
        2.2.2.2 Growing Demand For Cost-Effective Method/Technology For The Maintenance Of Structures
      2.2.3 Supply-Side Analysis
        2.2.3.1 Reduction In The Price Of Sensors
    2.3 Market Size Estimation
      2.3.1 Bottom-Up Approach
      2.3.2 Top-Down Approach
    2.4 Market Breakdown And Data Triangulation
    2.5 Research Assumptions
      2.5.1 Assumptions

3 Executive Summary

4 Premium Insights
  4.1 The Increasing Demand For Shm In Aging Civil Infrastructure Is Expected To Drive The Market
  4.2 Shm Market Size For Top 3 Applications
  4.3 China Is Expected To Lead The Apac Shm Market During The Forecast Period
  4.4 Shm Market For Bridges In North America, 2014
  4.5 Apac Expected To Be The Fastest-Growing Market For Shm During The Forecast Period

5 Market Overview
  5.1 Market Segmentation
    5.1.1 Shm Market, By Technology
    5.1.2 Shm Market, By Solution Type
    5.1.3 Shm Market, By Application
    5.1.4 Shm Market, By Geography
  5.2 Market Evolution
  5.3 Market Dynamics
    5.3.1 Drivers
      5.3.1.1 Demand For Cost-Effective Infrastructure Maintenance
      5.3.1.2 Uncertainties In Natural Calamities Leads To High Demand For Shm
      5.3.1.3 Increasing Need Of Public Safety Measures
      5.3.1.4 Government Support
    5.3.2 Restraints
      5.3.2.1 Alternate Methods
      5.3.2.2 High Shm Cost
      5.3.3 Opportunities
        5.3.3.1 Shm Installation At The Initial Construction Phase Of Infrastructure
5.3.4 Challenges
5.3.4.1 Technical And Operational Challenges
5.3.4.2 Huge Amount Of Data Management And Processing
5.3.5 Winning Imperatives
5.3.5.1 Obligation For The Application Of Shm By The Government Regulatory Bodies

6 Industry Trends
6.1 Introduction
6.2 Value Chain Analysis
6.3 Porter'S Five Forces Model
6.3.1 Bargaining Power Of Suppliers
6.3.2 Bargaining Power Of Buyers
6.3.3 Threat Of New Entrants
6.3.4 Threats Of Substitutes
6.3.5 Competitive Rivalry

7 Shm Market, By Technology
7.1 Introduction
7.2 Wired Shm System
7.3 Wireless Shm System

8 Shm Market, By Solution Type
8.1 Introduction
8.2 Hardware
8.2.1 Sensors
8.2.2 Data Acquisition System (Das)
8.2.3 Others
8.3 Software & Services
8.3.1 Software
8.3.2 Services
8.3.2.1 Design And Consulting Services
8.3.2.2 Installation Services

9 Shm Market, By Application
9.1 Introduction
9.2 Bridges
9.3 Buildings
9.4 Tunnels
9.5 Dams
9.6 Stadiums
9.7 Others

10 Geographic Analysis
10.1 Introduction
10.2 North America
10.2.1 U.S.
10.2.2 Canada
10.2.3 Mexico
10.3 Europe
10.3.1 U.K.
10.3.2 Germany
10.3.3 France
10.3.4 Others
10.4 Asia-Pacific
10.4.1 China
10.4.2 Japan
10.4.3 Singapore
10.4.4 South Korea
10.4.5 Others
10.5 Rest Of The World

11 Competitive Landscape
11.1 Overview
11.2 Market Ranking Analysis For The SHM Market
11.3 Competitive Scenario
11.4 Recent Developments
11.4.1 Mergers & Acquisitions
11.4.2 Agreements And Partnerships
11.4.3 New Product Launches
11.4.4 Expansion

12 Company Profiles (Overview, Products And Services, Financials, Strategy & Development)*
12.1 Introduction
12.2 Advitam, Inc.
12.3 Cowi A/S
12.4 Digitexx Data Systems, Inc.
12.5 Geocomp Corp.
12.6 Geokon, Inc.
12.7 Geosig Ltd.
12.8 Hottinger Baldwin Messtechnik Gmbh (Hbm)
12.9 Nova Metrix Llc
12.10 Sodis Lab
12.11 Strainstall Uk Ltd.
*Details On Overview, Products And Services, Financials, Strategy & Development Might Not Be Captured In Case Of Unlisted Companies.

13 Appendix
13.1 Insights Of Industry Experts
13.2 Discussion Guide
13.3 Introducing Rt: Real-Time Market Intelligence
13.4 Available Customizations
13.5 Related Reports

List of Tables
Table 1 Aging Infrastructure Worldwide Propels the Growth of the SHM Market
Table 2 Existence of Alternate Methods Hinder the Growth of the SHM Market
Table 3 The Installation of SHM at the Initial Construction Phase is A Huge Opportunity for the SHM Market
Table 4 Porter’s Five Forces Analysis: Industry Rivalry Likely to Have the Maximum Impact on the Overall Market
Table 5 Comparison Between Wired and Wireless SHM
Table 6 Global Structural Health Monitoring Market, By Technology, 2013–2020 (USD Million)
Table 7 Wired SHM Market, By Application, 2013–2020 (USD Million)
Table 8 Wired SHM Market, By Region, 2013–2020 (USD Million)
Table 9 North America: Wired SHM Market, By Country, 2013–2020 (USD Million)
Table 10 Europe: Wired SHM Market, By Country, 2013–2020 (USD Million)
Table 11 APAC: Wired SHM Market, By Country, 2013–2020 (USD Million)
Table 12 RoW: Wired SHM Market, By Country, 2013–2020 (USD Million)
Table 13 Wireless SHM Market, By Application, 2013–2020 (USD Million)
Table 14 Wireless SHM Market, By Region, 2013–2020 (USD Million)
Table 15 North America: Wireless SHM Market, By Country, 2013–2020 (USD Million)
Table 16 Europe: Wireless SHM Market, By Country, 2013–2020 (USD Million)
Table 17 APAC: Wireless SHM Market, By Country, 2013–2020 (USD Million)
Table 18 RoW: Wireless SHM Market, By Geography, 2013–2020 (USD Million)
Table 19 Global SHM Market, By Solution Type, 2013–2020 (USD Million)
Table 20 Function of Sensors
Table 21 Structural Health Monitoring Market, By Hardware, 2013–2020 (USD Million)
Table 22 SHM Hardware Market, By Region, 2013–2020 (USD Million)
Table 23 SHM Market, By Software & Services, 2013–2020 (USD Million)
Table 24 SHM Software & Services Market, By Region, 2013–2020 (USD Million)
Table 25 Global SHM Market, By Application, 2013–2020 (USD Million)
Table 26 SHM Market for Bridges, By Technology, 2013–2020 (USD Million)
Table 27 SHM Market in Bridges, By Region, 2013–2020 (USD Million)
Table 28 SHM Market in Buildings, By Technology, 2013–2020 (USD Million)
Table 29 SHM Market for Buildings, By Region, 2013–2020 (USD Million)
List of Figures

Figure 1 Years Considered in the Report
Figure 2 SHM Market: Research Design
Figure 3 Number of Interstate Bridges Built in the U.S., 1934–2013
Figure 4 Number of Sensors vs Installation Cost Per Sensor, 1997–2008
Figure 5 Market Size Estimation Methodology: Bottom-Up Approach
Figure 6 Market Size Estimation Methodology: Top-Down Approach
Figure 7 SHM Application in Bridges Expected to Hold the Largest Market Share During the Forecast Period
Figure 8 Wireless Technology is Expected to Witness the Highest Growth Rate in the SHM Market During the Forecast Period
Figure 9 Software and Services Segment Estimated to Hold the Largest Share of the SHM Market During the Forecast Period
Figure 10 North America Held the Largest Market Share of the SHM Market in 2014
Figure 11 A Significant Increase in the Demand for SHM for Cost-Effective Infrastructure Maintenance and...

Table 30 SHM Market for Tunnels, By Technology, 2013–2020 (USD Million)
Table 31 SHM Market for Tunnels, By Region, 2013–2020 (USD Million)
Table 32 SHM Market for Dams, By Technology, 2013–2020 (USD Million)
Table 33 SHM Market for Dams, By Region, 2013–2020 (USD Million)
Table 34 SHM Market for Stadiums, By Technology, 2013–2020 (USD Million)
Table 35 SHM Market for Stadiums, By Region, 2013–2020 (USD Million)
Table 36 SHM Market for Other Applications, By Technology, 2013–2020 (USD Million)
Table 37 SHM Market for Others, By Region, 2013–2020 (USD Million)
Table 38 Global Structural Health Monitoring Market, By Region, 2013–2020 (USD Million)
Table 39 North America: SHM Market, By Technology, 2013–2020 (USD Million)
Table 40 North America: Market, By Application, 2013–2020 (USD Million)
Table 41 North America: Market, By Solution Type, 2013–2020 (USD Million)
Table 42 North America: Market, By Country, 2013–2020 (USD Million)
Table 43 U.S.: SHM Market, By Technology, 2013–2020 (USD Million)
Table 44 Canada: SHM Market, By Technology, 2013–2020 (USD Million)
Table 45 Mexico: SHM Market, By Technology, 2013–2020 (USD Million)
Table 46 Europe: SHM Market, By Technology, 2013–2020 (USD Million)
Table 47 Europe: Market, By Application, 2013–2020 (USD Million)
Table 48 Europe: Market, By Solution Type, 2013–2020 (USD Million)
Table 49 Europe: Market, By Country, 2013–2020 (USD Million)
Table 50 U.K.: SHM Market, By Technology, 2013–2020 (USD Million)
Table 51 Germany: SHM Market, By Technology, 2013–2020 (USD Million)
Table 52 France: SHM Market, By Technology, 2013–2020 (USD Million)
Table 53 Rest of Europe: SHM Market, By Technology, 2013–2020 (USD Million)
Table 54 APAC: SHM Market, By Technology, 2013–2020 (USD Million)
Table 55 APAC: Market, By Application, 2013–2020 (USD Million)
Table 56 APAC: Market, By Solution Type, 2013–2020 (USD Million)
Table 57 APAC: Market, By Country, 2013–2020 (USD Million)
Table 58 China: SHM Market, By Technology, 2013–2020 (USD Million)
Table 59 Japan: SHM Market, By Technology, 2013–2020 (USD Million)
Table 60 Singapore: SHM Market, By Technology, 2013–2020 (USD Million)
Table 61 South Korea: SHM Market, By Technology, 2013–2020 (USD Million)
Table 62 Rest of APAC: SHM Market, By Technology, 2013–2020 (USD Million)
Table 63 RoW: SHM Market, By Technology, 2013–2020 (USD Million)
Table 64 RoW: Market, By Application, 2013–2020 (USD Million)
Table 65 RoW: Market, By Geography, 2013–2020 (USD Million)
Table 66 RoW: Market, By Solution Type, 2013–2020 (USD Million)
Table 67 Middle East: SHM Market, By Technology, 2013–2020 (USD Million)
Table 68 Africa: SHM Market, By Technology, 2013–2020 (USD Million)
Table 69 Australia: SHM Market, By Technology, 2013–2020 (USD Million)
Table 70 Market Ranking Based on Hardware Offering By Companies for the SHM Market, 2014
Table 71 Market Ranking Based on Software & Services Offered By Companies for the SHM Market, 2014
Table 72 Mergers and Acquisitions
Table 73 Agreements and Partnerships
Table 74 New Product Launches
Table 75 Expansion
Upcoming Sports Events
Figure 12 SHM Market for Bridges Expected to Grow at the Highest CAGR
Figure 13 China Held the Largest Share of the SHM Market in APAC in 2014
Figure 14 North America Held Nearly One-Third Share of the Global SHM Market for Bridges in 2014
Figure 15 The SHM Market in China is Expected to Grow at the Highest CAGR Between 2015 and 2020
Figure 16 SHM Market: Segmentation
Figure 17 Market Segmentation: By Technology
Figure 18 Market Segmentation: By Solution Type
Figure 19 Market Segmentation: By Application
Figure 20 Market Segmentation: By Geography
Figure 21 Evolution of the Structural Health Monitoring Market
Figure 22 Demand for Cost-Effective Infrastructure Maintenance —A Major Driver for the SHM Market During the Forecast Period
Figure 23 U.S. Spending on Maintenance of Bridges vs Need of Capital Investment (2012)
Figure 24 Value Chain Analysis: Major Value Addition is Done During Manufacturing & Distribution
Figure 25 Porter's Five Forces Analysis
Figure 26 Porters Analysis: SHM Sensors
Figure 27 Bargaining Power of Suppliers
Figure 28 Bargaining Power of Buyers
Figure 29 Threat of New Entrants
Figure 30 Threats of Substitutes
Figure 31 Competitive Rivalry
Figure 32 SHM Market, By Technology
Figure 33 Wired SHM Market, By Application, 2015-2020 (USD Million)
Figure 34 North America: Wired SHM Market, By Country, 2015-2020 (USD Million)
Figure 35 Wireless SHM Market, By Application, 2015-2020 (USD Million)
Figure 36 APAC Wireless SHM Market, By Country, 2015-2020 (USD Million)
Figure 37 SHM Market, By Solution Type
Figure 38 Global SHM Market, By Solution Type, 2015 vs 2020 (USD Million)
Figure 39 SHM Market, By Hardware Type, 2015 vs 2020 (USD Million)
Figure 40 SHM Hardware Market, By Region, 2015 vs 2020 (USD Million)
Figure 41 SHM Software & Services Market, By Region, 2015 vs 2020 (USD Million)
Figure 42 SHM Market, By Application
Figure 43 Global SHM Market, By Application, 2015 vs 2020 (USD Million)
Figure 44 SHM Market for Bridges, By Region, 2015 vs 2020 (USD Million)
Figure 45 SHM Market for Buildings, By Region, 2015 vs 2020 (USD Million)
Figure 46 SHM Market for Tunnels, By Region, 2015 vs 2020 (USD Million)
Figure 47 SHM Market for Dams, By Region, 2015 vs 2020 (USD Million)
Figure 48 SHM Market for Stadiums, By Region, 2015 vs 2020 (USD Million)
Figure 49 SHM Market for Other Applications, By Region, 2015 vs 2020 (USD Million)
Figure 50 Global SHM Market, By Region
Figure 51 Geographic Snapshot: APAC SHM Market Estimated to Grow at the Highest Rate During the Forecast Period
Figure 52 Chinese SHM Market Estimated to Grow at the Highest Rate Between 2015 and 2020
Figure 53 North American Market Snapshot: Demand for SHM Would Be Driven By the Large Number of Structurally Deficient and Functionally Obsolete Bridges
Figure 54 North America: SHM Market
Figure 55 North America: SHM Market, By Country, 2015 vs 2020 (USD Million)
Figure 56 European Market Snapshot: Demand to Be Driven By the Large Number of Aging Civil Infrastructure Such as Bridges, Dams, Tunnels, and Others
Figure 57 European SHM Market
Figure 58 Europe: SHM Market, By Country, 2015 vs 2020 (USD Million)
Figure 59 APAC Market Snapshot: Demand to Be Driven By New Chinese Government Rules and Regulation Regarding the Use of SHM in Civil Infrastructure Projects
Figure 60 APAC SHM Market
Figure 61 APAC: SHM Market, By Country, 2015 vs 2020 (USD Million)
Figure 62 RoW SHM Market
Figure 63 RoW: SHM Market, By Country, 2015 vs 2020 (USD Million)
Figure 64 Key Growth Strategies Adopted By the Top Companies Over the Last Three Years
Figure 65 Market Evaluation Framework – Agreements and Partnerships Fueled the Growth of the SHM Market in 2014
Figure 66 Battle for Market Share: Mergers and Acquisitions Were the Key Strategies in 2014
Figure 67 Geographic Revenue Mix of Key Market Players
Ordering:

Order Online - [http://www.researchandmarkets.com/reports/3456333/](http://www.researchandmarkets.com/reports/3456333/)

Order by Fax - using the form below

Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct and select the format(s) you require.

Product Name: Structural Health Monitoring (SHM) Market by Technology, by Solution Type, by Application, and by Geography - Global Trend & Forecast to 2020
Web Address: http://www.researchandmarkets.com/reports/3456333/
Office Code: SCH31RW3

Product Formats
Please select the product formats and quantity you require:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic (PDF)</td>
<td></td>
</tr>
<tr>
<td>Single User:</td>
<td>USD 5650</td>
</tr>
<tr>
<td>1 - 5 Users:</td>
<td>USD 6650</td>
</tr>
<tr>
<td>Site License:</td>
<td>USD 8150</td>
</tr>
<tr>
<td>EnterpriseWide:</td>
<td>USD 10000</td>
</tr>
</tbody>
</table>

Contact Information
Please enter all the information below in BLOCK CAPITALS

Title: Mr ☐ Mrs ☐ Dr ☐ Miss ☐ Ms ☐ Prof ☐
First Name: __________________________ Last Name: __________________________
Email Address: * __________________________
Job Title: __________________________
Organisation: __________________________
Address: __________________________
City: __________________________
Postal / Zip Code: __________________________
Country: __________________________
Phone Number: __________________________
Fax Number: __________________________

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

- [ ] Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

- [ ] Pay by check: Please post the check, accompanied by this form, to:

  Research and Markets,
  Guinness Center,
  Taylors Lane,
  Dublin 8,
  Ireland.

- [ ] Pay by wire transfer: Please transfer funds to:

  Account number: 833 130 83
  Sort code: 98-53-30
  Swift code: ULSBIE2D
  IBAN number: IE78ULSB98533083313083
  Bank Address: Ulster Bank,
  27-35 Main Street,
  Blackrock,
  Co. Dublin,
  Ireland.

If you have a Marketing Code please enter it below:

Marketing Code: ____________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:

(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World