BACnet Market Adoption

Drawn from BSRIA Global Market Research Report

Market Penetration of Communications Protocols

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BACnet
International

Source Data

Data in this report is drawn from a BSRIA market research study on the global market penetration of building automation data communications protocols. The BSRIA study incorporated information from a variety of sources, including:

- Historical data from published BSRIA market research reports on Building Automation & Control Systems from 2012 to 2016

- A 2017 global online survey to a sample of 200 industry contacts

- Desk research conducted by BSRIA staff in 2017

- Pan-regional interviews with manufacturers, integrators and relevant associations and alliances

Market data and commentary are drawn from the "Market Penetration of Communications Protocols" report published by BSRIA in March 2018. The full study can be purchased from BSRIA at sales@BSRIA.com

BSRIA is a world leading provider of market intelligence specialized in the HVAC industry, with over 35 years of longstanding relationship with HVAC manufacturers, contractors, and distributors worldwide. BSRIA is a long time educational partner of AHR and offers unique industry presentations each year at HVAC shows around the world (AHR, ISH, MOSTRA, etc.). Since 2010, BSRIA regularly publishes building automation reports which include a section on communication protocols adoption.

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Introduction

The BACnet standard was developed and is maintained by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). BACnet's purpose is to provide standard, manufacturer-independent data communications for building automation devices so that equipment can easily work together and information can be readily shared among devices and systems. The BACnet standard was initially released in 1995 and it has been continually enhanced and extended since then. BACnet adoption started slowly but has accelerated dramatically in the last 10-15 years. This report provides information on BACnet adoption in various countries and regions of the world. It also includes projections on the likely adoption rate of BACnet over the next five years.

This document is published by BACnet International which is an industry association focused on facilitating the successful use of BACnet in building automation and control systems through product certification, interoperability testing, educational programs and promotional activities. BACnet International complements the work of the ASHRAE BACnet standards committee and other BACnet-related interest groups around the world.

Global BACnet Adoption

For the 5 year period from 2012 to 2017, BACnet has had strong upward market share trend as more and more users and suppliers adopt it.

Year	BACnet
2012	49%
2013	52%
2014	54%
2015	58%
2016	63%
2017	64%

BACnet Global Market Share Trend
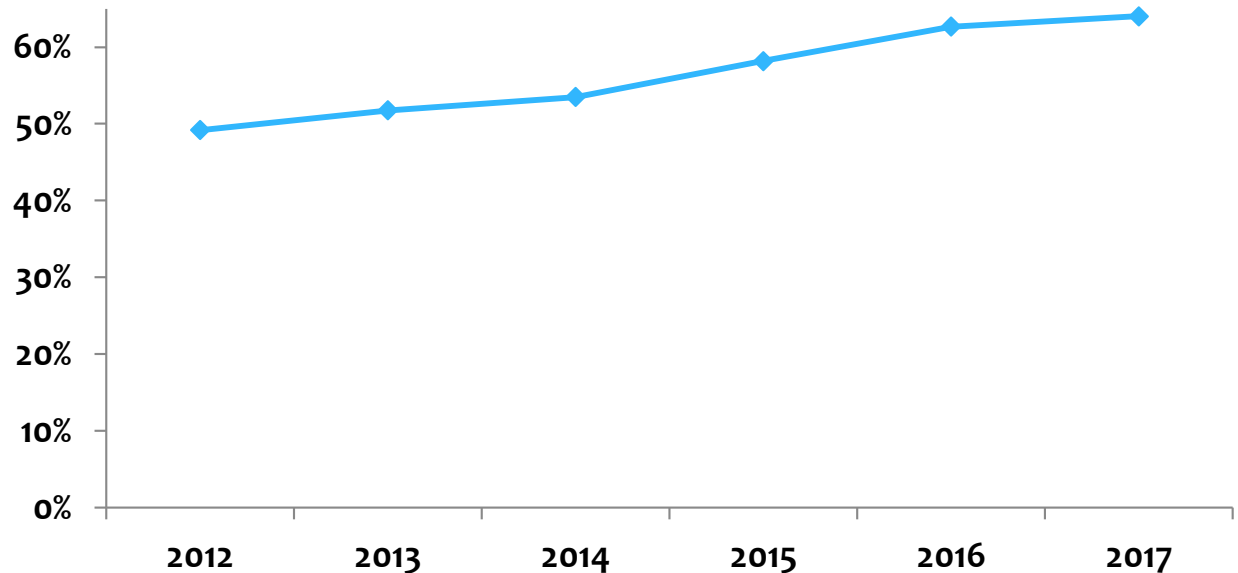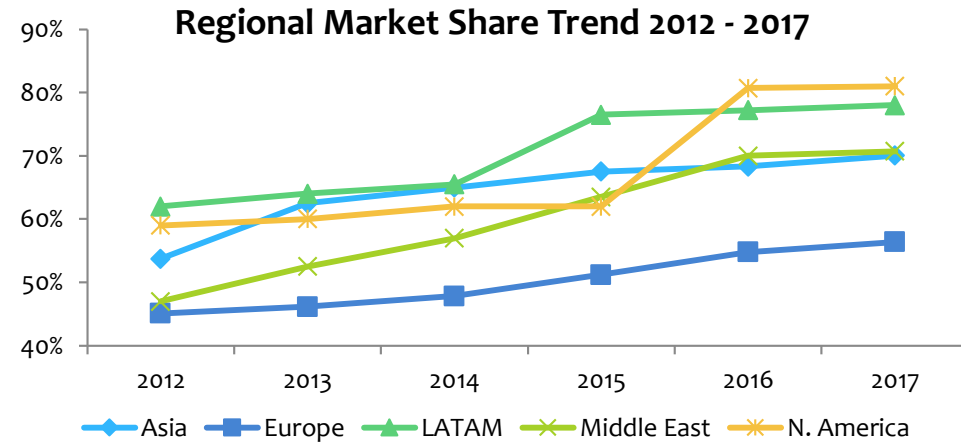

Source: BSRIA Inc.

Regional BACnet Adoption

The global BACnet share has been continuously trending upwards since 2012.

BACnet's share has been growing faster in the Middle East and North America, and is becoming more popular in Asia.

Important drivers of BACnet's adoption include:

- ASHRAE is a very influential organization in the building automation industry.
- BACnet is an open protocol with no proprietary components
- BACnet's rapid and broad adoption makes it a preferred protocol for companies or users looking to switch from their current solutions

Regional Market Share Trend 2012 - 2017

| Year	Asia	Europe	LATAM	Middle East	North America
2012	54%	45%	62%	47%	59%
2013	63%	46%	64%	53%	60%
2014	65%	48%	66%	57%	62%
2015	68%	51%	77%	64%	62%
2016	68%	55%	77%	70%	81%
2017	70%	56%	78%	71%	81%

Source: BSRIA Inc.

BACnet Influence on Specifications

Many project specifications require one or more specific protocols. BACnet is a protocol that is frequently required in project specifications in all regions of the world.

Survey responses to the question "What percent of project specifications require which protocol?"

Project Specifications Requiring BACnet, by Region

Asia	Europe	LATAM	Middle East	N. America
77%	52%	84%	88%	54%
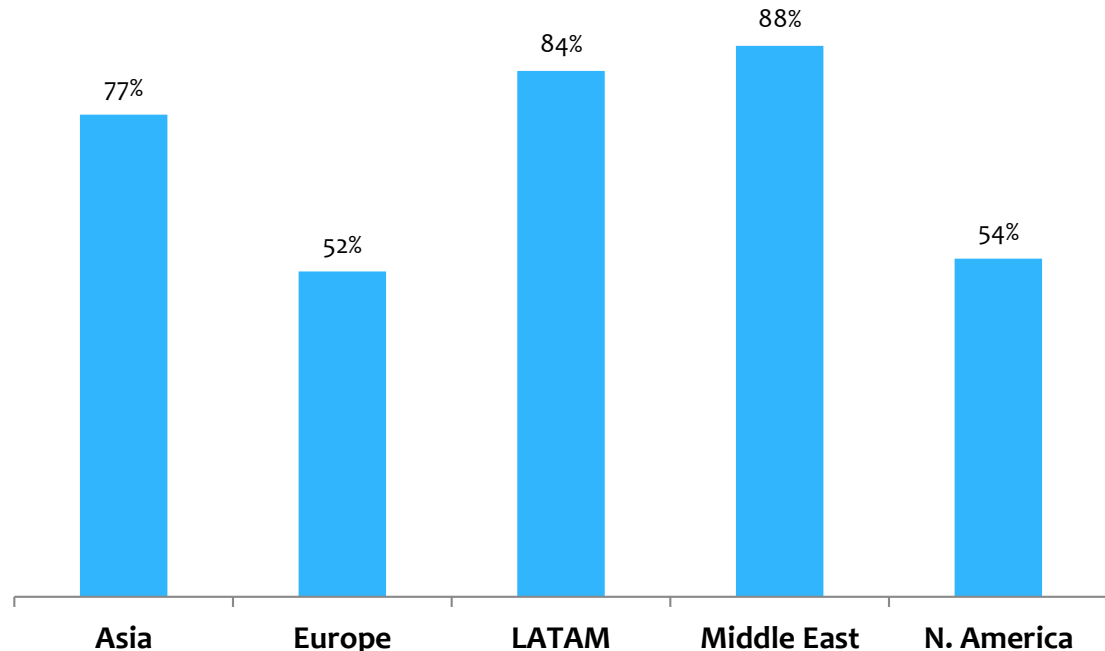
Source: BSRIA Inc.

Communication Protocols Five Year Outlook

The usage of communication protocols is growing as market trends change and building specifications adapt to changing requirements. While in previous years only large projects and buildings used sophisticated communication protocols, one can now see smaller projects and smaller buildings (under 100,000 square feet) adopting these protocols as well due to the increased number of controls and sensors being used. An increasing number of smaller systems and cloud based systems are being used rather than large workstations.

Also, since smaller buildings are being fitted with the latest technology, wireless communications are more commonly used, especially in North America. In commercial buildings, such as schools and office environments, there has been demand for wireless protocols such as ZigBee.

In some countries in Asia and in the Middle East, there is growth in home automation in high end buildings and residences. In commercial buildings, an increase in protocol use in the hospitality industry has been observed in these regions as well.

With increasing rates of digitization and internet connectivity, cybersecurity has become a growing concern and customers are asking for more secure communication protocols for their controls and systems. This has led to ASHRAE focusing on security issues for BACnet and other protocols also introducing more secure protocol releases.

The Internet of Things (IoT) has also affected protocol choice in advanced regions such as North America and some parts of Europe while it has yet to take hold in regions like Latin America, Asia and the Middle East. IoT and device-device communication has caused a shift in communication protocol usage by driving IP based protocols and is triggering innovation within existing protocol types. BACnet is looking at modernizing its technology to fully integrated cloud applications.

As energy efficiency is a major priority globally, California Title 24 and ASHRAE Guideline 36 being examples, this has increased the demand for controller devices and therefore a wider application of communication protocols. Also, with legislation surrounding well-being and sick buildings, additional and more granular measurements of a building's state are required leading to an increased number of controls and sensors.

With interoperability also being very important, Project Haystack is working on semantic tagging, BACnet will greatly reduce the need for configuration. Protocol revision 19 will include semantic tagging in 2-3 years.
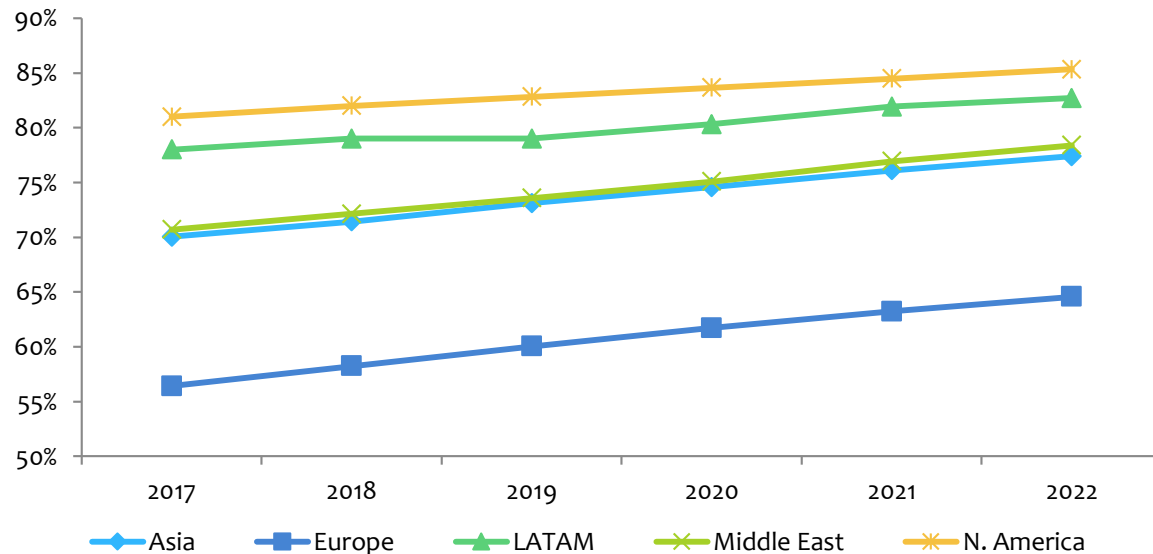
Manufacturer-independent, open protocols with certification schemes and interoperability with wirelessly connected devices will survive.

Five Year Regional Outlook

BACnet adoption will benefit from the network effect of critical mass as it already has a substantial market share. By integrating IT technologies such as IPv6 and web services the BACnet standard is further developing into a modern, IT-friendly building protocol.

Considering that BACnet will be adopting semantic tagging in the next couple of years to make its usage more interoperable, including the fact that it is already interoperable with wireless protocols, BACnet's share is on an upward trend for the five year forecast ending 2022. Security of the protocol is still a concern in the market.

Regional BACnet Market Share Projections 2017 - 2022

Legend: Asia, Europe, LATAM, Middle East, N. America

Source: BSRIA