



BIM's value proposition for building owners

How service providers can prepare their clients for BIM

BIM AND BUILDING OWNERS

The use of Building Information Modeling (BIM) during design and construction helps to improve the quality, increase the performance, and reduce the cost of new or renovated buildings. However, a building's first costs are smaller than the ongoing costs of operating, maintaining, and managing a building throughout its life. As such, BIM offers a compelling value proposition to owners and operators after occupancy for improved facility management, operations, and maintenance



I think it's very important that the executive level, including the chief financial officer and the chief executive officer, understands that the return on investment of BIM lies in staff and building efficiency for owners.

Mike Whaley
Founder and President
TURIS Systems

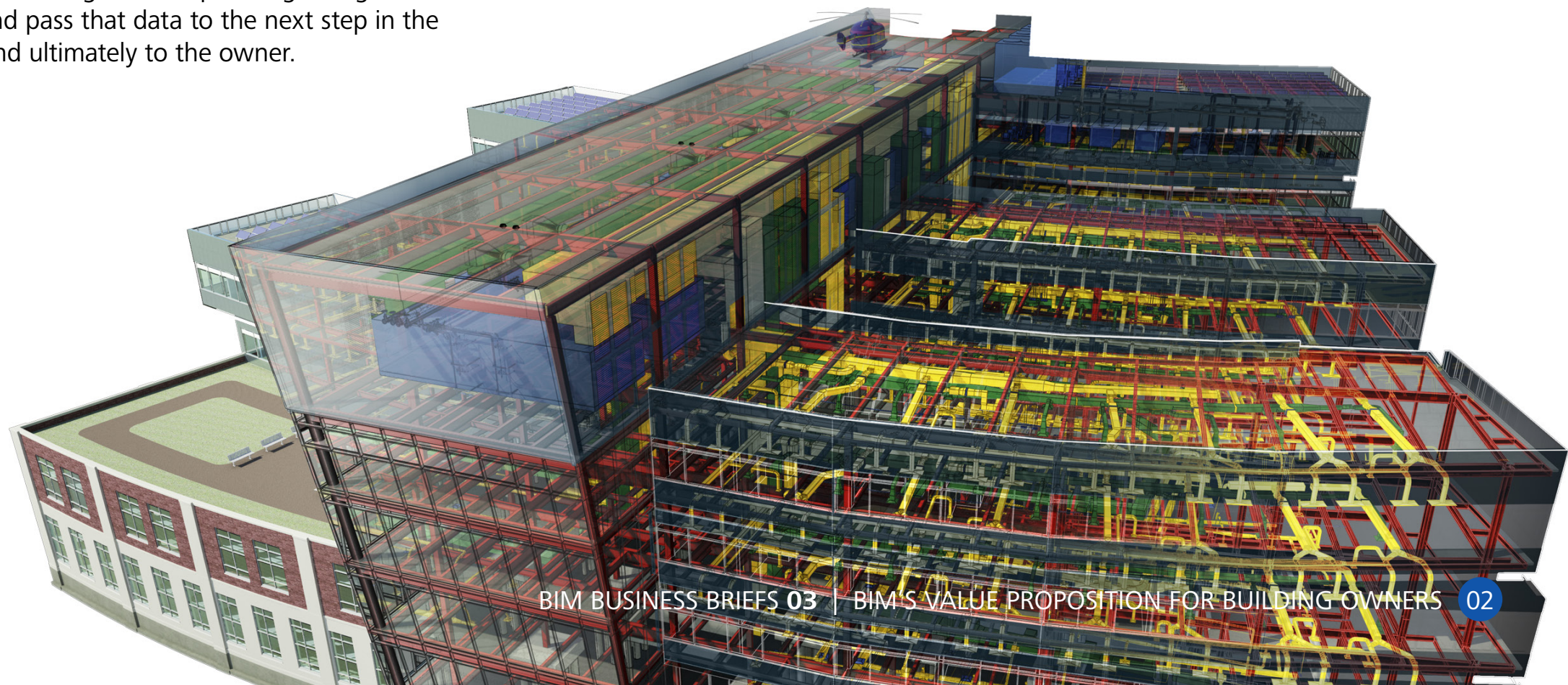
Fortunately, the success of BIM for building delivery is convincing more and more building owners to repurpose virtual building design and construction models (and the information they contain) for their own building management and operations. The day-to-day use of these digital assets helps owners to better understand the current state of their facilities and to make better decisions. And as building owners broaden their business focus to the total costs of managing a building asset over its lifecycle, the value of BIM becomes more pronounced.

The information at the center of BIM is the key to its value for building owners. The ability of owners to maximize that value hinges on the use of standardized data streams throughout design, construction, and commissioning, as well as a thorough understanding of the end use, and users, of that building data. Industry specifications for collecting building information needed for operations (such as COBie) help project teams digitally capture facility information created throughout the planning, design, and construction processes and pass that data to the next step in the building delivery chain, and ultimately to the owner.



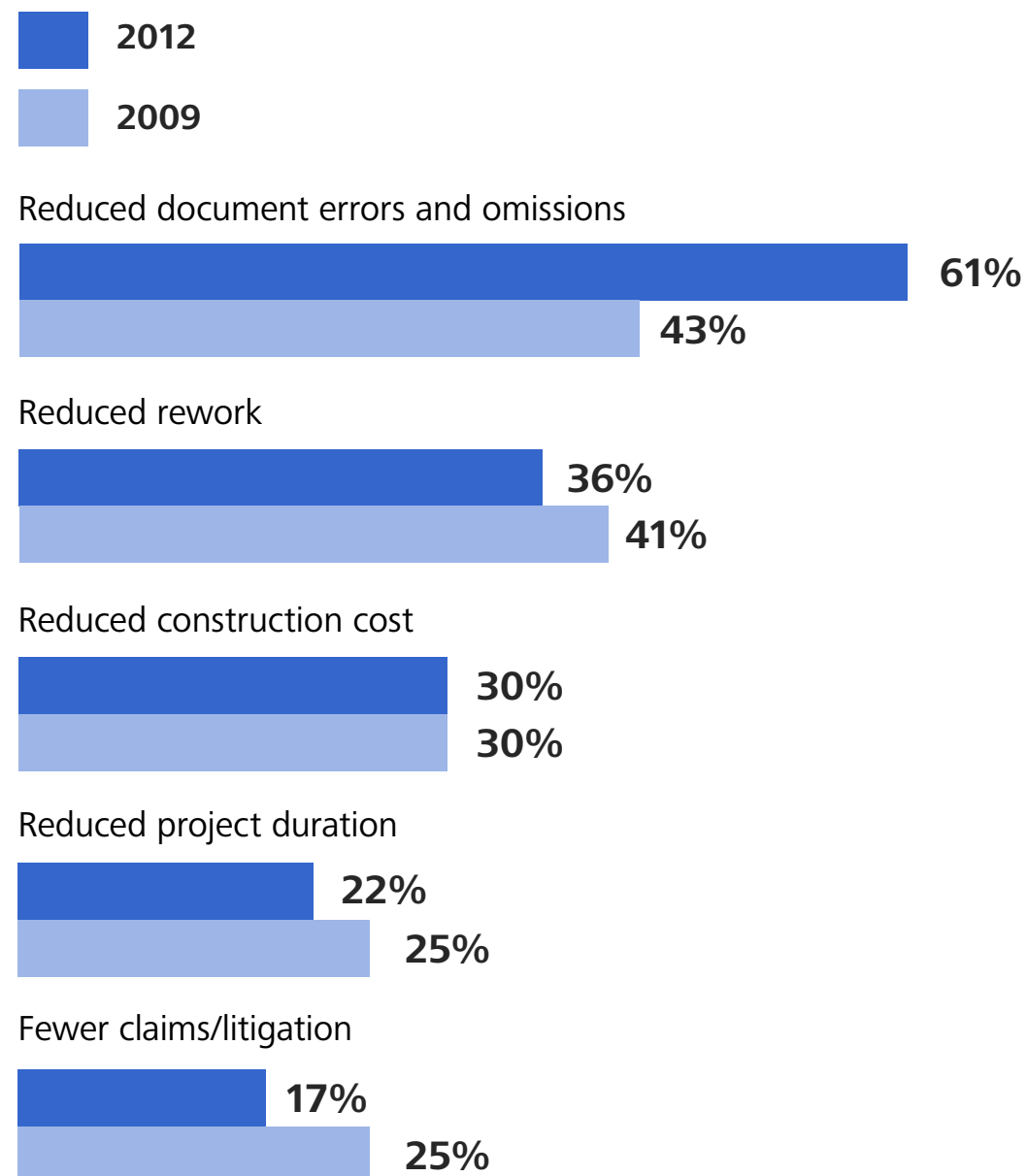
BIM INTEROPERABILITY

Models are increasingly becoming part of construction documentation as a way of sharing and delivering building design data. Specifications such as COBie streamline the exchange of building data from project development and construction to handover. For more information on interoperability, visit: www.autodesk.com/campaigns/interoperability



TOP BIM BENEFITS FOR OWNERS (2009 AND 2012)

Source: McGraw-Hill Construction, 2012



BENEFITS OF BIM FOR BUILDING OWNERS— BEFORE AND AFTER

In the last decade, BIM has proven its worth for building design and construction, with owners citing benefits such as reduced document errors and omissions, rework, construction costs, and project schedule. In general, owners enjoy these building delivery benefits regardless of the building type. For example, almost any type of building project—institutional, industrial, or commercial—will experience reduced rework due to model-based preconstruction coordination efforts. Likewise, BIM can help all owners (regardless of building type) optimize the energy performance of their facility to reduce operating/energy costs.

After occupancy, there are some universal long-term benefits of BIM for owners. For example, accurate as-maintained building models with embedded facility data can offer these advantages:

- Integration and use with owners' existing systems for [streamlined space/asset management](#) and computerized maintenance management
- Evaluation and analysis of a building's [energy performance](#), giving owners a better understanding of building performance to support meeting energy mandates and regulatory requirements and/or make decisions to improve the carbon footprints of its facilities
- Improved efficiency and accuracy of space reporting, documentation, and calculations
- Better planning for capital improvements projects, helping owners reduce the cost and complexity of building renovations and retrofits

View the complete SmartMarket Report, "The Business Value of BIM in North America"

GET THE REPORT

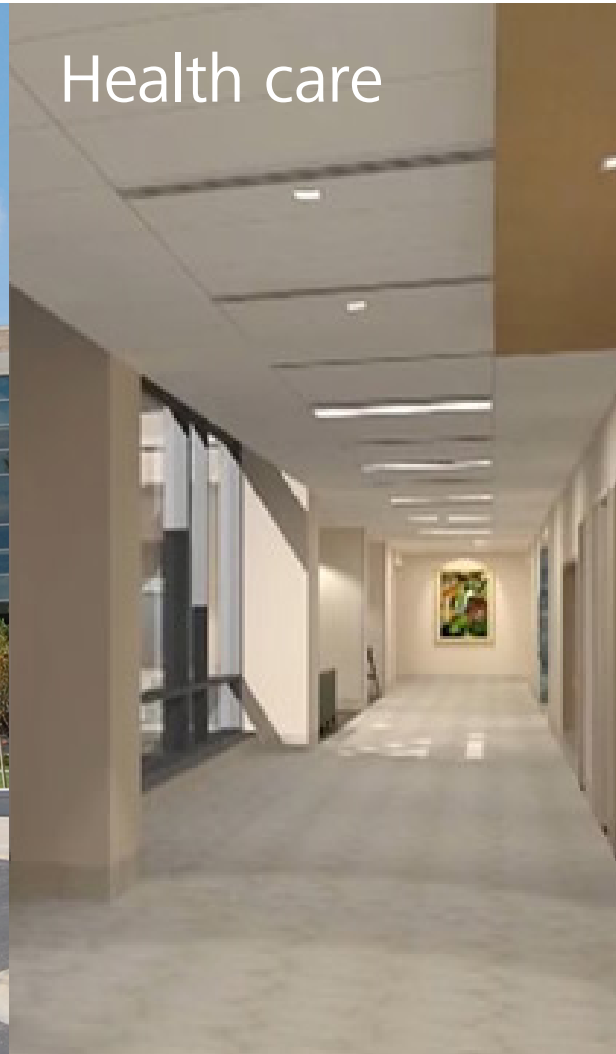
Post-occupancy benefits

Some benefits are more important or unique to owners based on the use of the building. View some examples of the post-occupancy benefits of BIM unique to specific types of buildings, including education, health care, commercial/real estate/government, and retail.

Education



Health care



Commercial/
Real estate/
Government



Retail



Xavier University



EDUCATION

- Facility managers can provide space and/or asset chargebacks to individual departments or colleges by using as-maintained building models with embedded facility information.
- For institutions that rely on grants or outside sources for partial funding of their operations, intelligent building models help facility managers create space inventories and develop financial analysis for indirect cost recovery (ICR).

The accuracy of the data in the BIM handover models of our new facilities is considerably greater than traditional handover information we received in the past. These models saved us a year's worth of manual field collection and data entry, and helped eliminate the need for polylining.

Greg Meyer

Assistant Director for Facility Assessment Xavier University

[VIEW THE CUSTOMER SUCCESS STORY](#)

MaineGeneral Hospital

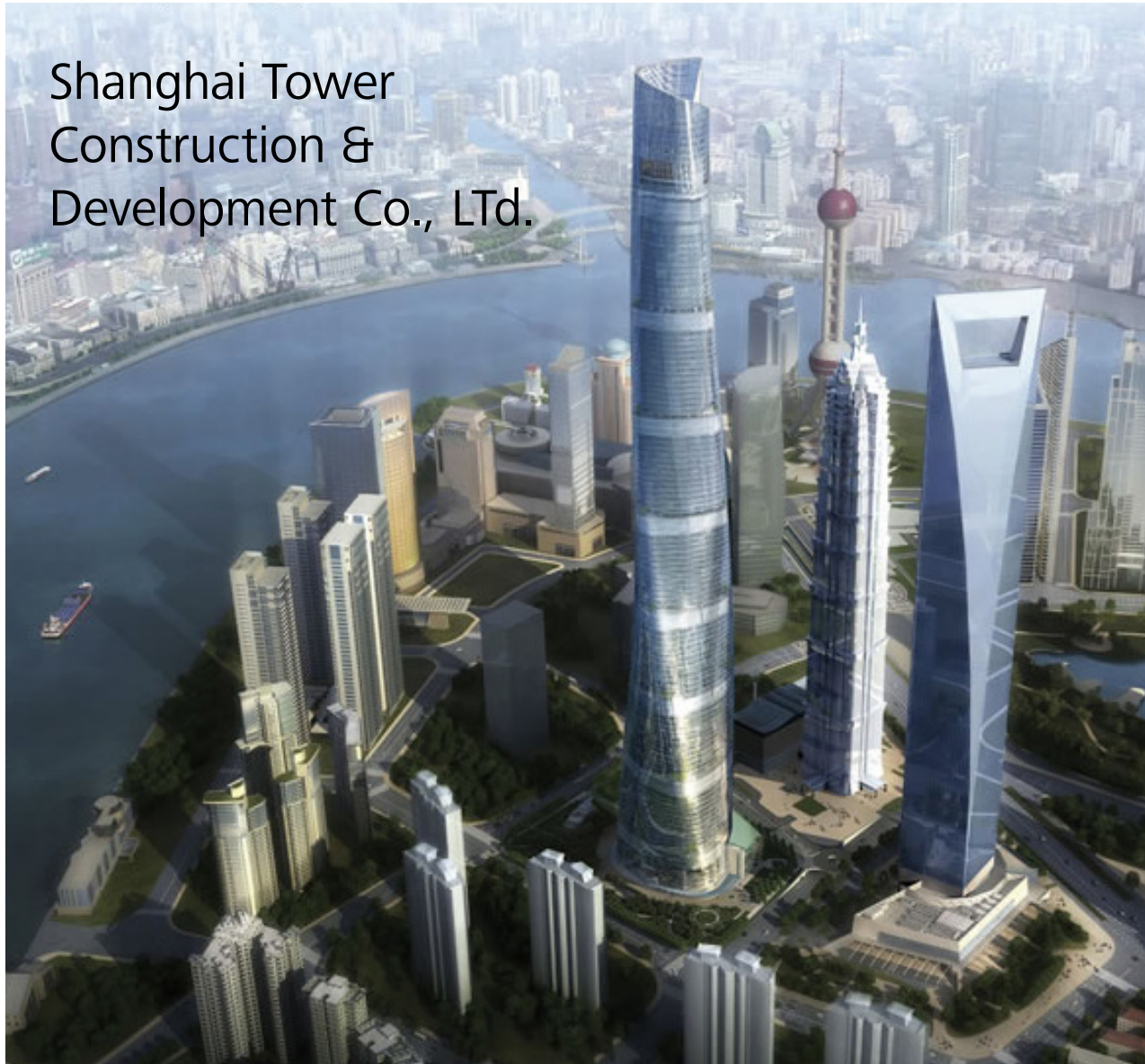


HEALTH CARE

- Hospitals and other medical facilities can use accurate building models to streamline the reporting of space utilization involved in the treatment of Medicare and Medicaid patients to receive reimbursements from the U.S. government.
- For hospital facility maintenance, renovations, or expansion projects (that feature very complex building systems), one of the most powerful benefits of using BIM is model-based project coordination of new components and as-is facility data to reduce rework and change orders.

[VIEW THE CUSTOMER SUCCESS STORY](#)

Shanghai Tower Construction & Development Co., LTd.



COMMERCIAL/REAL ESTATE/GOVERNMENT

- Property owners use intelligent 3D building models to help them manage space and perform 'spatial validation' for chargebacks to tenants.
- Owners can efficiently respond to workforce changes that result in extensive interior reconfigurations by using the models for virtual design and construction (VD&C).
- BIM supports sustainable building design strategies that lead to better building performance—helping owners attract tenants to high-end, green properties that can be leased faster and maintain higher occupancy levels.

[VIEW THE CUSTOMER SUCCESS STORY](#)

Crate & Barrel



RETAIL

- Accurate facility models provide owners agility during expansion, renovation, and reconfiguration.
- Model-based visualization of stores can be used for marketing and sales planning.

HEAR THE CUSTOMER SUCCESS STORY

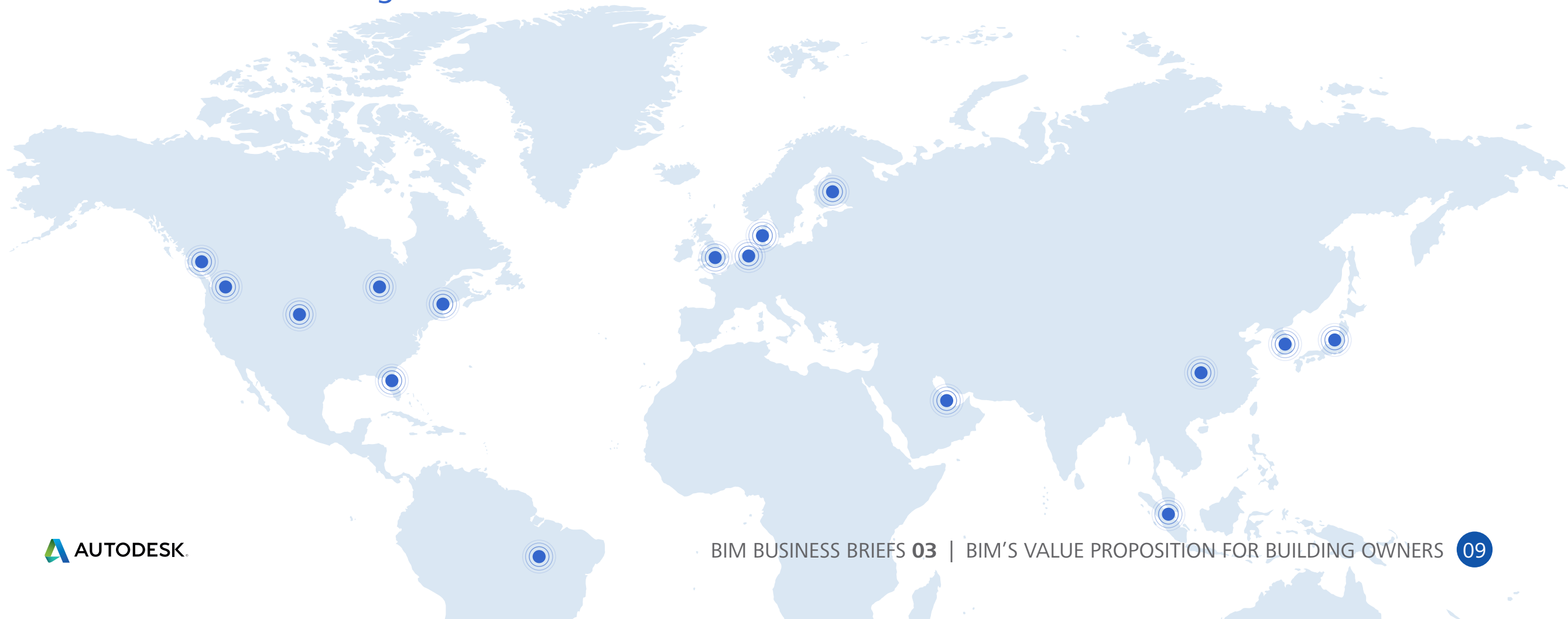
HOW OWNERS ARE PREPARING FOR BIM

To reap the benefits of BIM for the building lifecycle, owners are now starting to encourage or even mandate the use of BIM during design and construction in anticipation of reusing building models and data for their operations. The ability to integrate as-built building models with operations based building data results in model-based handover deliverables that streamline commissioning and help owners better manage their assets.

The growing number of owner mandates, guidelines, and policies for BIM usage and delivery on projects is loosely illustrated in the graphic “BIM Mandates Growing”. In addition, countries around the world are establishing mandates or BIM policies, as are private and public owner organizations. The objectives of these efforts may vary (see examples below), but the owners’ growing calls for BIM is clear.

- The U.K. government is mandating BIM to enhance the effectiveness of its construction industry and boost its global competitiveness. In 2011, the U.K. published a BIM strategy that required collaborative 3D BIM on government projects by 2016 with a goal to cut 20 percent from construction costs, as well as capture data electronically to improve the delivery and long-term management of its assets.
- The Pennsylvania State University (Penn State) has produced two widely used BIM guides to improve the design, construction, and operation processes of capital facility projects to help streamline the planning and implementation of BIM use within one capital facility or project, and to help facility owners and operators develop strategies for integrating BIM throughout their organization.
- In 2006, the U.S. General Services Administration (GSA)—the government agency that builds and manages federal facilities and, as such, the largest owner of commercial space in the United States—began requiring the delivery of building information models for major federal building projects.

BIM Mandates Growing



HOW SERVICE PROVIDERS CAN GET READY FOR BIM AND HELP OWNERS DO LIKEWISE

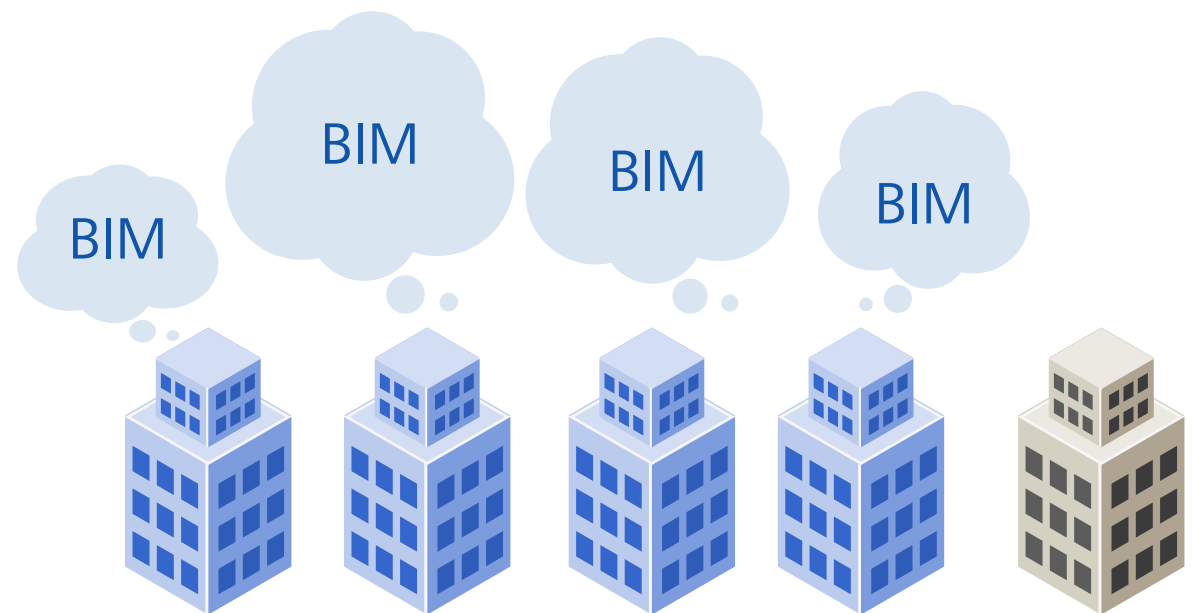
Service providers that rely primarily on 2D CAD tools for project design, documentation, and coordination will need to acquire BIM capabilities to compete for most nonresidential projects in the near future. Model-based design is quickly becoming a prerequisite for many projects, and firms are increasingly finding that they must be 'BIM-ready' to compete for new work.

81% of U.S. companies surveyed for the 2012 SmartMarket Report, The Business Value of BIM in North America, indicated that they consider BIM capabilities when making their selections for project teams. The report also revealed that 74% of the contractors surveyed are using BIM and cited reduction in rework and the ability to pursue new business as the main benefits of BIM.

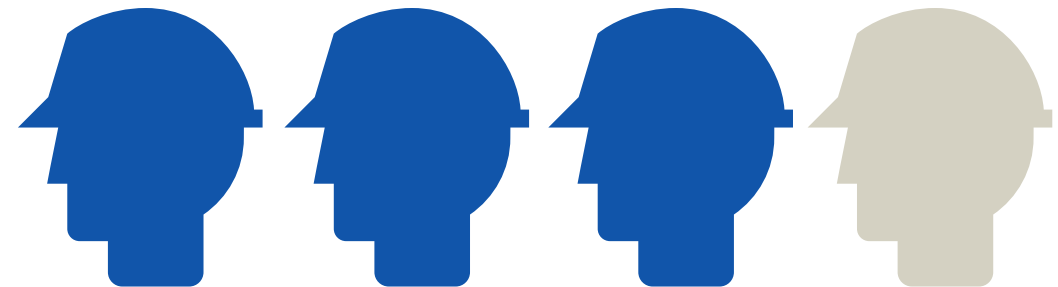
In response to stiffer competition, firms that are already engaged in model-based design or construction can use their BIM expertise to expand their business—marketing their BIM capabilities to win new work and/or offering [complementary services for commissioning and handover](#) to grow their business. In addition, firms can develop expertise in services aimed at lowering key lifecycle costs, such as energy analysis.

Finally, firms can help their clients and prospective clients understand the value of BIM for their capital projects as well as for ongoing facility operations—advising clients to look beyond lowest first costs and educating them on the long-term benefits of BIM.

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81% of businesses are considering BIM



74% of contractors use BIM