

# Global BIM and Digital Twin for Built Environment Growth Opportunities

The Dynamic Duo will  
Transform the Future of  
Digital Building Life Cycle  
Management

Global Energy & Environment  
Research Team at Frost & Sullivan

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# Scope of Analysis



Scope	
<b>Geographic Coverage</b>	Global—North America, Europe, Asia-Pacific (APAC), and Rest of the World (RoW)
<b>Study Period</b>	2020–2028
<b>Base Year</b>	2022
<b>Forecast Period</b>	2023–2028
<b>Monetary Unit</b>	US dollar

## BIM

The scope of the study includes the BIM software and services used to create virtual 3D static models of built environments, enabling collaboration and visualization of these environments' design and construction.

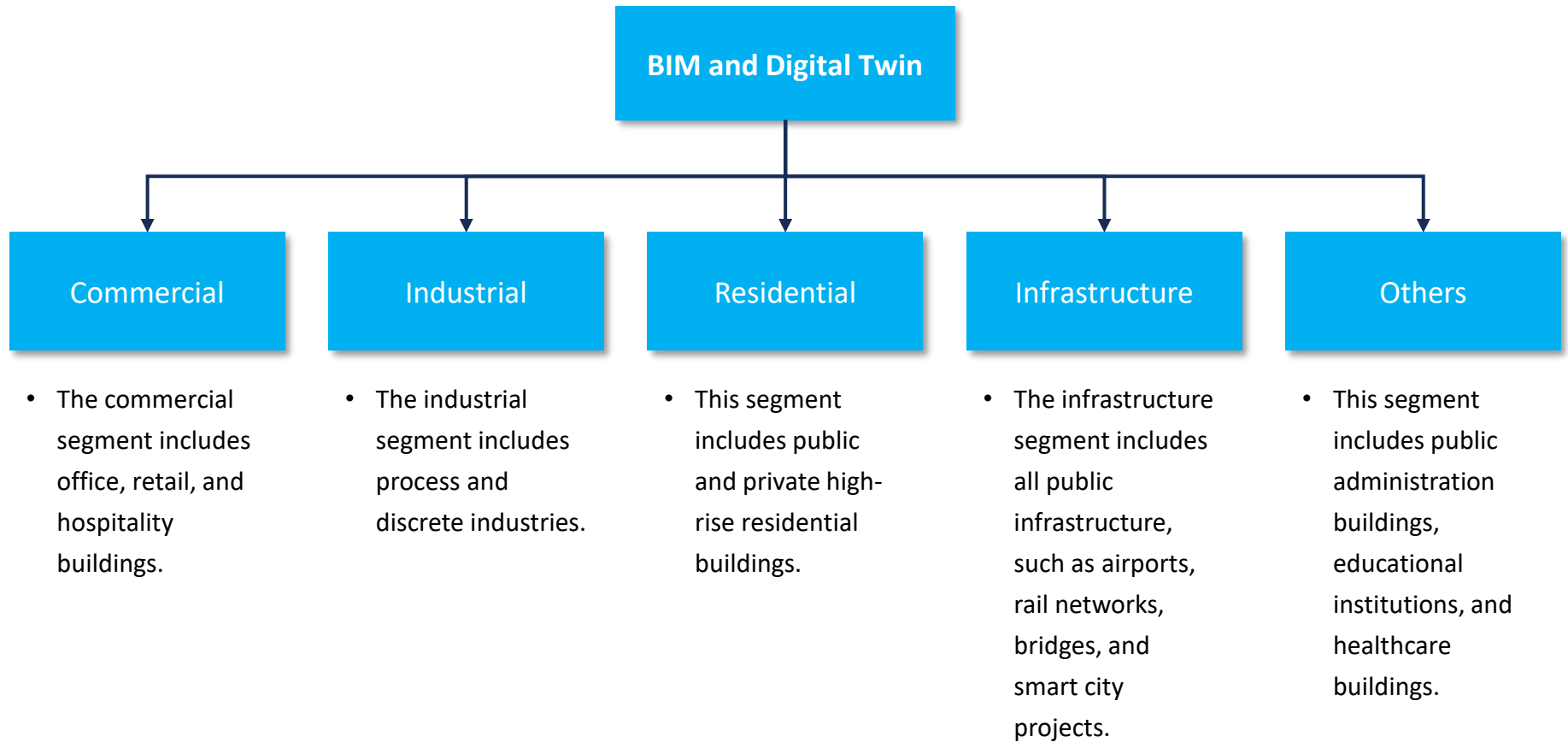
## Digital Twin

The scope of the study includes digital twin software and services that create dynamic and digital replicas of physical building assets, such as heating, ventilation, and air conditioning (HVAC), lighting, and fire safety and security systems, elevators, escalators, manufacturing industries' equipment, and water and wastewater industries' equipment. The platform combines real-time spatial, occupancy, assets, and environmental data with analytics, converting building data into building intelligence and supporting decision-making for overall building performance optimization and building life cycle management. Some digital twin applications included in the study are data orchestration, building performance simulation, immersive 3D experiences, climate resilience analysis, and financial risk assessment for built environments.

The study captures BIM and digital twin revenue from buildings' preconstruction phase to the operational phase. It does not cover the construction management software used exclusively for project bidding, financial planning, project scheduling, field operations, or quality control. However, if these features are included with BIM and digital twin software, their revenue is covered.

Source: Frost & Sullivan

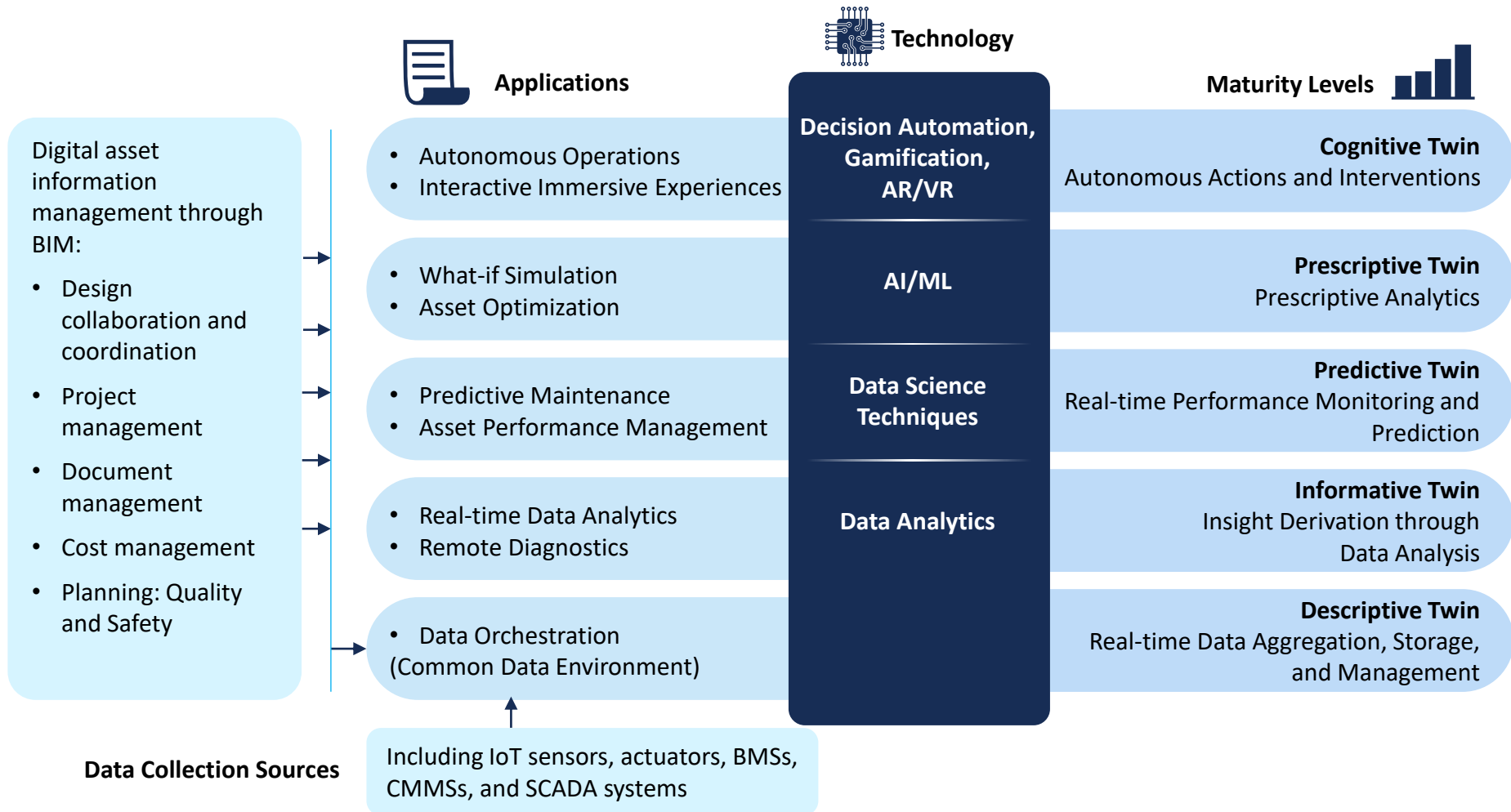
# End-user Segmentation



Key: End-user segmentation is analyzed at the global level only.

Source: Frost & Sullivan

# BIM and Digital Twin: Roadmap and Maturity Levels



BMS: Building management system; CMMS: Computerized maintenance management system; SCADA: Supervisory control and data acquisition

Source: Frost & Sullivan



# Top Performers and Emerging Innovators

**Autodesk**

**Aveva**

**Bentley**

**Cityzenith**

**Dassault  
Systemes**

**Glodon**

**Hexagon**

**Invicara**

**Matterport**

**Nemetschek  
Group**

**One  
Concern**

**Planon**

**Procore**

**RIB**

**Siemens**

**Tonomous**

**Trimble**

**Eptura**

**Willow**

**51World**

Source: Frost & Sullivan

# Growth Metrics

## BIM and Digital Twin: Growth Metrics, Global, 2022



Key: 100+ competitors, each with an average annual revenue greater than \$1.0 million

Note: All figures are rounded. The base year is 2022. Source: Frost & Sullivan

# Growth Drivers


## BIM and Digital Twin: Growth Drivers, Global, 2023–2028

Driver	1–2 Years	3–4 Years	5–6 Years
The growing need for unified digital building life cycle management platforms will further the demand for BIM and digital twin solutions.	High	High	High
The increasing penetration of building IoT and the end-to-end digitalization of mega infrastructure projects will aid digital twin market growth.	High	High	Medium
The growing importance of implementing sustainable construction techniques will boost BIM market growth.	Medium	High	High
Government-supported BIM mandates for public sector projects will increase BIM adoption.	Medium	Medium	Medium
Business potential due to the increasing urbanization will boost demand for BIM and digital twin solutions.	Medium	Medium	Medium

Source: Frost & Sullivan

# Growth Restraints

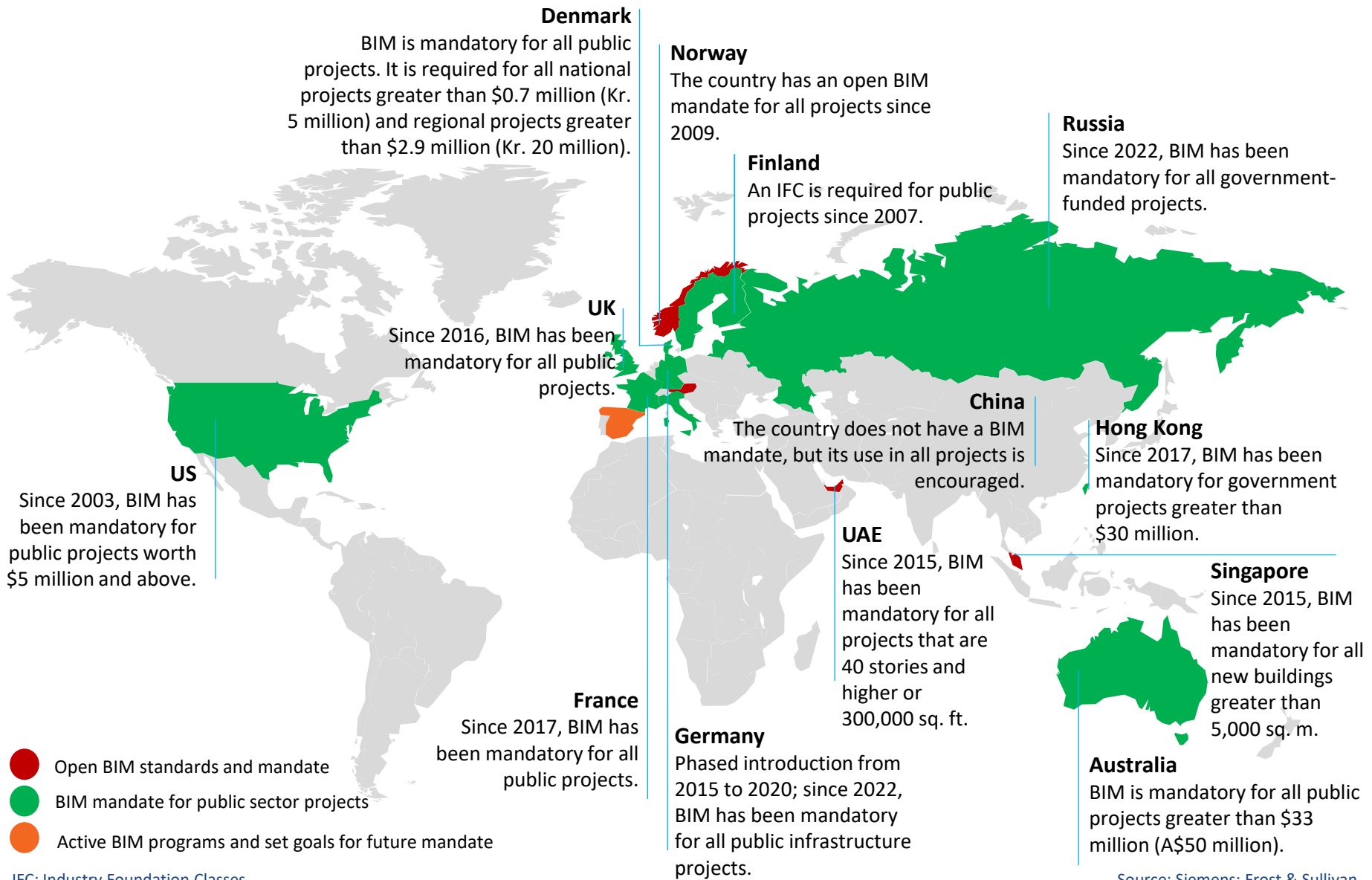
## BIM and Digital Twin: Growth Restraints, Global, 2023–2028



Restraint	1–2 Years	3–4 Years	5–6 Years
High capital investments hinder small and medium-sized companies from transitioning to BIM and digital twin.	High	High	High
A lack of BIM standardization causes implementation complexities in the ecosystem.	High	High	Medium
Fragmented BIM implementation in the built environment value chain restrains market growth.	Medium	Medium	Medium
Ambiguous market conditions and an uncertain economic climate affect market growth.	Medium	Low	Low

Source: Frost & Sullivan

# Global BIM Mandates



IFC: Industry Foundation Classes

Source: Siemens; Frost & Sullivan

## Company Overview

<b>Headquarters</b>	The United States
<b>Website</b>	<a href="https://autodesk.com">autodesk.com</a>
<b>Founding Year</b>	1982
<b>Leadership Team</b>	Andrew Anagnost – President and CEO; Raji Arasu – CTO; Steve Blum – COO; Debbie Clifford – CFO
<b>Company Size</b>	13,600+ employees
<b>Revenue</b>	\$5.01 billion (FY 2023)
<b>Revenue Growth</b>	CAGR (FY 2019-2023): 16.1% nominal
<b>Key Industries Served</b>	AEC, design and manufacturing, and media and entertainment

## Solution and Value Proposition

- Autodesk’s AEC products have been constantly improving the way building, infrastructure, and industrial projects are designed, built, and operated.
- Autodesk Construction Cloud is a collaborative environment designed for project stakeholders to connect workflows across a construction project’s life cycle, digitalize project data, integrate workflows, and increase efficiency and profits while minimizing risk.
- Autodesk leads the way in the AEC technology evolution with the launch of Autodesk Forma, an industry cloud that unifies workflows across teams that design, build, and operate built environments. Forma’s initial capabilities integrate automation and predictive analytics through AI in the planning and design stages to deliver better and more sustainable outcomes.
- Autodesk expands its operation and maintenance leadership through Autodesk Tandem, a digital twin solution that facilitates collaboration between stakeholders with streamlined communication and a centralized data repository as well as the ability to integrate with existing facility management platforms and offer a digitalized handover process.

## Competitive Differentiation

- Autodesk’s AEC portfolio offers comprehensive digital design, engineering, manufacturing, and production solutions, bringing together data from early-stage planning and design through to construction and creating a digital pipeline that delivers greater productivity, accuracy through process automation, and insight, thereby enabling more sustainable outcomes.
- Autodesk’s AEC products are built on cloud-based architecture that enables real-time collaboration with and accessibility from multiple devices, promoting seamless communication and collaboration between stakeholders.
- Most importantly, Autodesk products allow integration with a few other construction software applications, enabling data exchanges and interoperability across the different tools commonly used in the construction industry.
- Autodesk spearheads the outcome-based BIM 3.0 technological evolution through Autodesk Forma, which will unify BIM workflows and provide granular data that flows throughout project phases, stakeholders, and asset types.

## Other Highlights

- Autodesk has a strong network of 1,500 resellers and distributors worldwide, and 65% of its revenue was derived from indirect channel sales through distributors and resellers.
- Over the past 3 years, Autodesk derived 98% of its revenue from recurring revenue models through subscription plans, including term-based product subscriptions, cloud service offerings, and enterprise business agreements.
- Autodesk’s core AEC strategy has been to form a digital thread in a common data environment across the full asset life cycle management process. It is moving toward this strategy through product expansions, strategic partnerships, and suitable acquisitions.

Source: Autodesk; Frost & Sullivan