



The tipping point has arrived

Industry-wide BIM adoption is accelerating
digital transformation

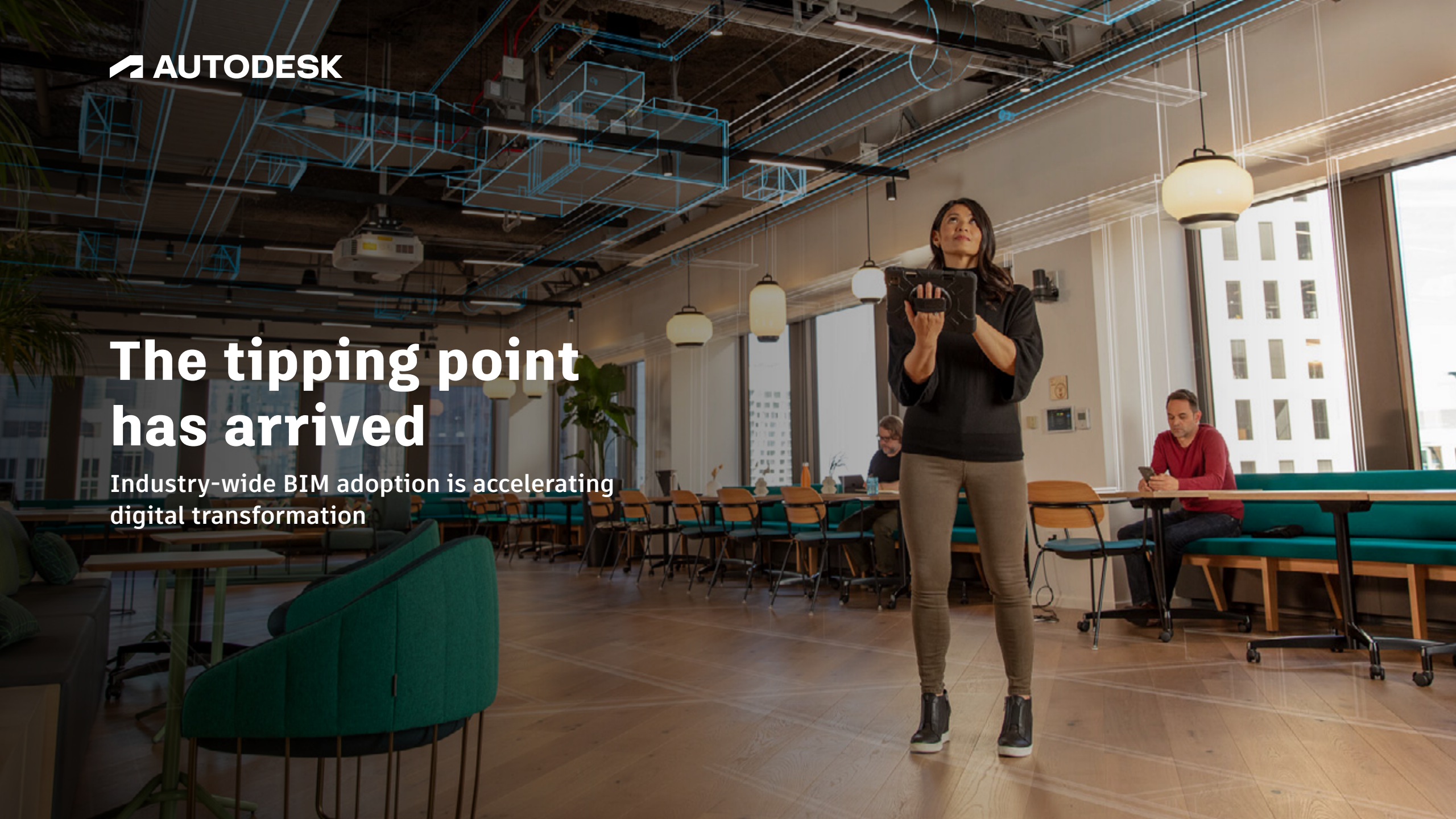


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“
I see still a big misconception of considering BIM just as a technology instead of a methodology that includes also processes and policies: this is where we are falling short of its potential. ...

I see BIM becoming business as usual to a point that we will not call it BIM anymore, but the journey is still long, and we do not need to jump the steps.
”

– Marzia Bolpagni, Eng., Ph.D. Associate Director, Mace
(Excerpted from Dodge Data & Analytics 2021 SmartMarket report)

BIM is transforming the AEC landscape

But the work is far from over

BIM is enabling a rapid transition within the Architecture, Engineering, and Construction (AEC) industry, driving positive business and project outcomes and supporting the digital transformation of the companies that embrace it. But many firms within the industry are still at the early stages of developing a BIM practice.

With the help of Dodge Data & Analytics and their research partners, a detailed picture is taking shape. The new SmartMarket report “Accelerating Digital Transformation Through BIM” shows both the extent of the BIM transformation and the challenges that are holding some firms back. A divide in terms of outcomes and ROI is increasingly visible between the firms that engage deeply with BIM on a majority of projects and those that are at an early stage in their BIM adoption.

Autodesk has been investing in BIM for the last twenty years, building the largest and most integrated portfolio of BIM-based software products. Thanks to Autodesk’s BIM leadership and broad market experience, Autodesk offers the education, training, tools, and support needed to help every AEC firm capture the full potential of BIM—no matter where they are in their journey.

SMARTMARKET REPORT BACKGROUND

To determine where the industry stands in the process of digital transformation and the value of BIM in that evolution, Dodge Data & Analytics gathered data through an online survey of 843 total respondents, spanning companies of various sizes in the following regions and industry sectors:

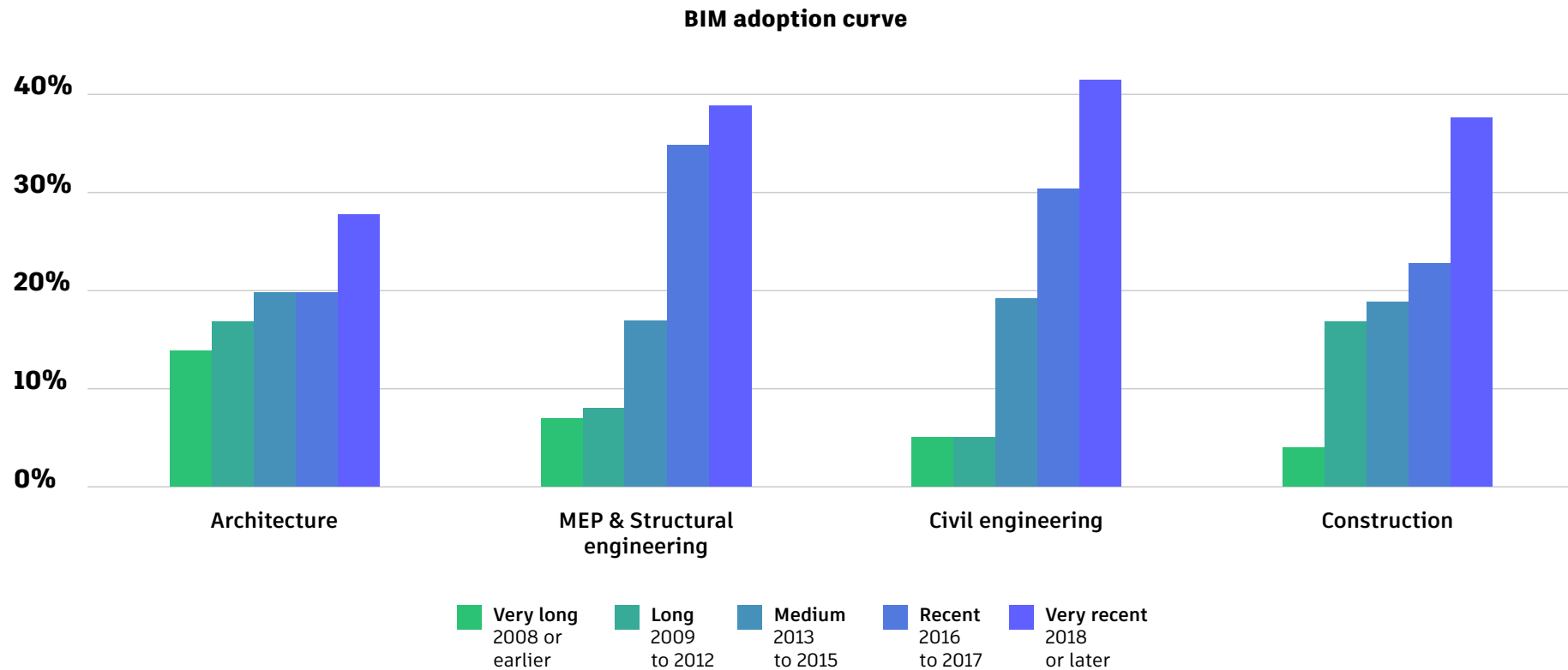
SECTORS Architecture, Civil engineering, MEP & Structural engineering, Construction, and Consulting

REGIONS Australia, Canada, France, Germany, Japan, New Zealand, Scandinavia, UK, and USA



The pace of BIM adoption is accelerating industry-wide

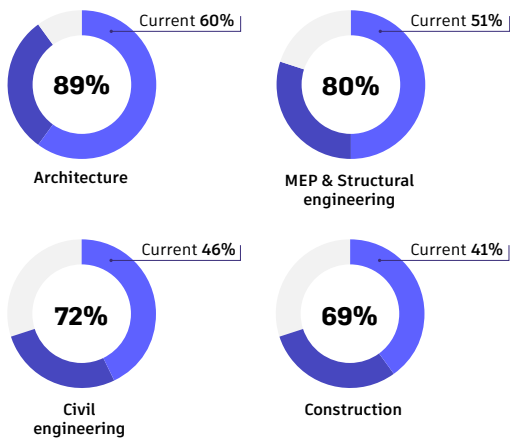
The researchers from Dodge Analytics found that BIM is rapidly becoming standard practice throughout the industry. While architecture firms are the most likely to have BIM practices that have evolved over many years, engineering and construction firms are embracing BIM at record levels.



BIM-enabled firms are implementing BIM practices in a growing portion of projects

The latest Dodge SmartMarket report is clear. The industry has reached a tipping point with BIM. The majority of firms that use BIM now implement it on 50% or more of their projects. Moreover, the depth of a firm’s BIM engagement correlates directly to its reported benefits from BIM. As the following pages will show, BIM is driving value on the outcomes that matter most to today’s AEC companies. Firms with mature BIM practices are ready to get the most out of new tools and technologies as they become available.

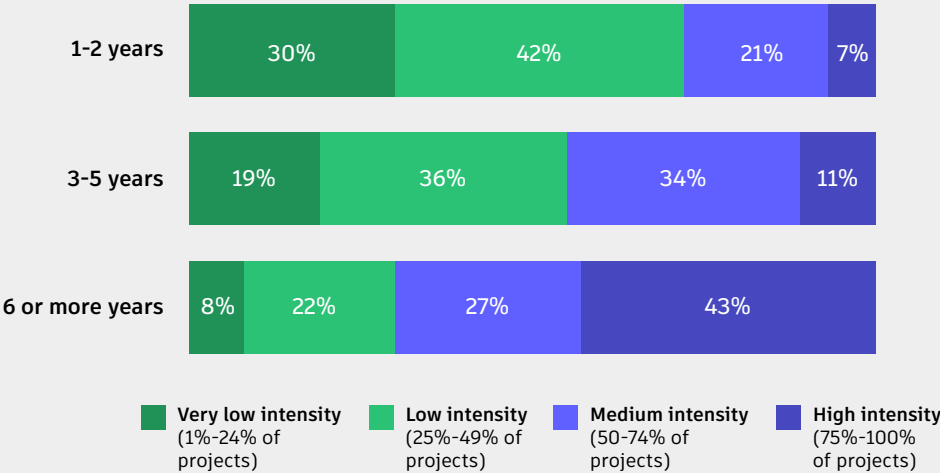
Forecast of BIM usage on 50% or more of projects



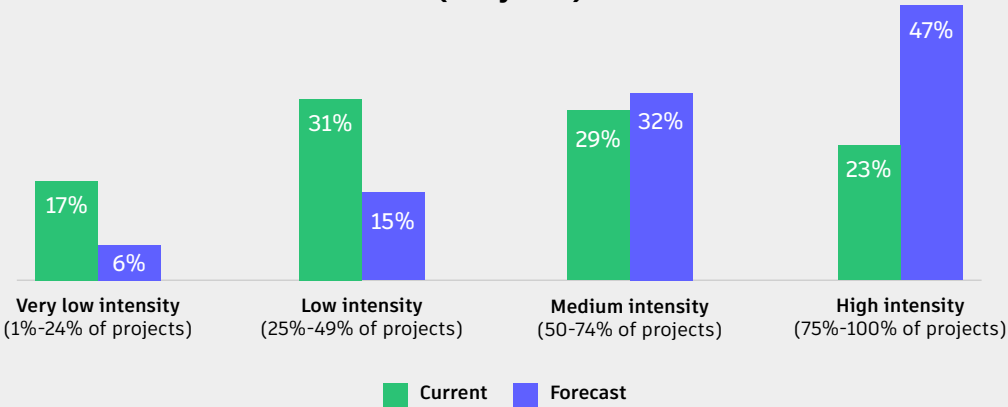
The majority of firms that use BIM are now integrating it into at least half of their projects, with a marked increase forecast of BIM usage in the next 2-3 years.

The direct relationship between the increased intensity of BIM usage with the number of years in practice serves as strong evidence of the long-term value of BIM.

BIM intensity by years of BIM use



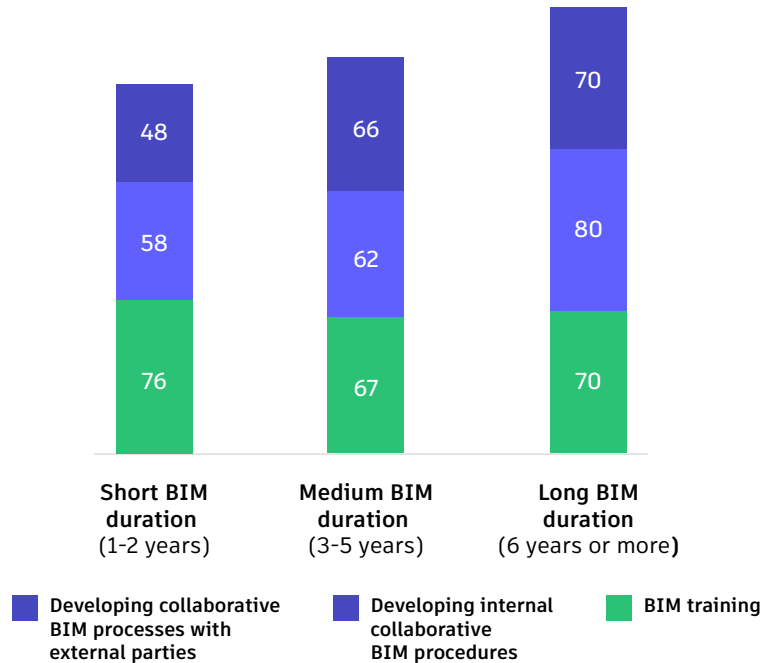
Current BIM intensity compared with forecast (2-3 years)



The importance of BIM investment

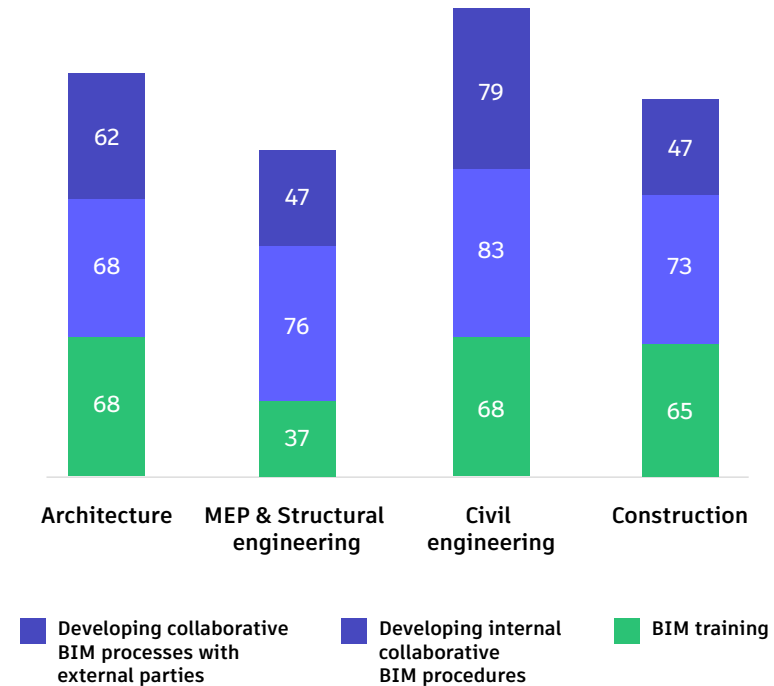
Investing in BIM training is key in the optimization of BIM for integrated digital workflows in internal and external collaborative processes.

Process-related investments by length of time using BIM (1-100 scale)



Continuing to use BIM consistently over time leads to greater appreciation of its critical contributions to improved multiparty collaboration and project outcomes for all stakeholders.

Process-related investments by company type (1-100 scale)



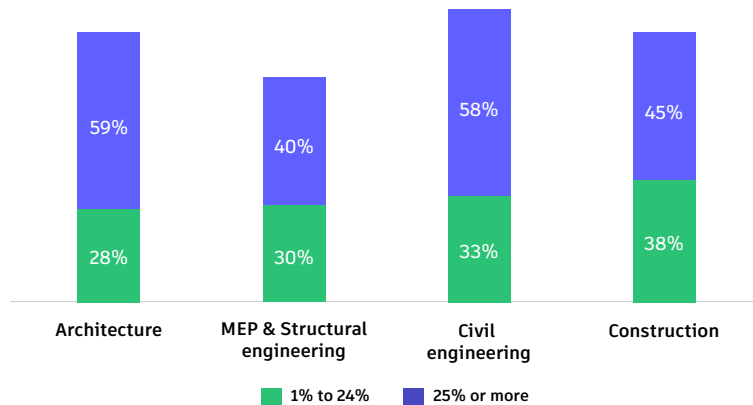
Interest in collaborative processes is high across the board. There seems to be a direct correlation between optimization of technology investments and areas where BIM training is more prevalent.

ROI grows with a commitment to process and implementation

Firms capture greater returns as they increase intensity of implementation and become more adept at BIM.

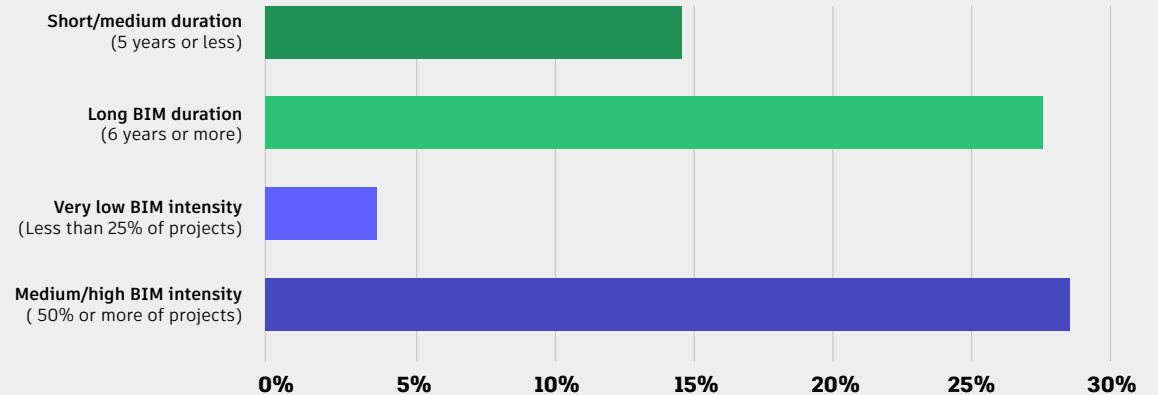
Architects were BIM's earliest adopters, and they still report the highest ROI from their BIM practices. No surprise there, but late-adopting civil engineers have captured similar returns through their investment in BIM-first processes. This indicates that BIM ROI is driven by intensity of use as much—or more—as it is by age of practice.

Perceived ROI of BIM by company type

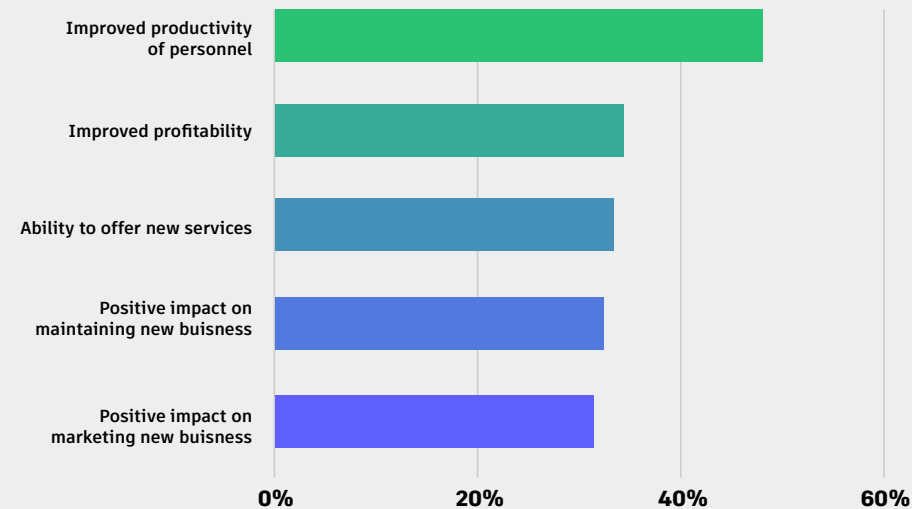


The majority of firms from all sectors report positive ROI from BIM investments, with Civil Engineers and Architects capturing the largest perceived returns.

Impact of BIM duration and intensity on achieving 50% or higher ROI



Top internal benefits From improving ROI on BIM



Unlocking high value benefits with BIM

Architecture and engineering firms report significant benefits.

When asked to rate the benefits of successfully implementing BIM practices, architecture and engineering firms overwhelmingly reported medium to high levels of growth and success across a broad spectrum of categories.

Business growth

Improved client satisfaction

28% 61%

Positioned as an industry leader

25% 59%

Expand/diversified services

28% 55%

Improved win rate

31% 47%

Improved sustainability

Exceeded performance requirements

31% 49%

Reduced material usage

29% 47%

Increased project resiliency

27% 48%

Reduced/removed emissions

27% 44%

Risk reduction

Better at managing complexity

24% 69%

Reduced errors/rework

30% 62%

Better at meeting design requirements

25% 64%

Increased stakeholder buy-in

28% 54%

Operational efficiency

Improved team collaboration

24% 67%

Improved data handover

30% 61%

Increased workload capacity

25% 55%

Reduced overall design time

28% 50%

Medium BIM intensity
(50-75% of projects)

High/very high BIM intensity
(75% or more of projects)

Unlocking high value benefits with BIM

Construction firms report significant benefits.

Construction firms and contractors look for a different range of benefits, but their ultimate satisfaction with the results is in line with what architecture and engineering firms report after integrating BIM practices into their workflows.

Winning business

Project success rate

31% 52%

Stakeholder engagement

30% 49%

Bid efficiency

28% 48%

Improved win rate

35% 47%

Project quality

Fewer onsite challenges

25% 65%

Reduced rework

25% 65%

Improved handovers

32% 53%

Fewer defects

30% 49%

Cost and schedule

Cost control

36% 43%

Forecast accuracy

32% 46%

Schedule control

33% 52%

Resource planning

33% 46%

Risk reduction

Safety awareness

31% 47%

Reduced incident rate

31% 33%

Reduced environmental impact

23% 37%

Reduced insurance premiums

26% 28%

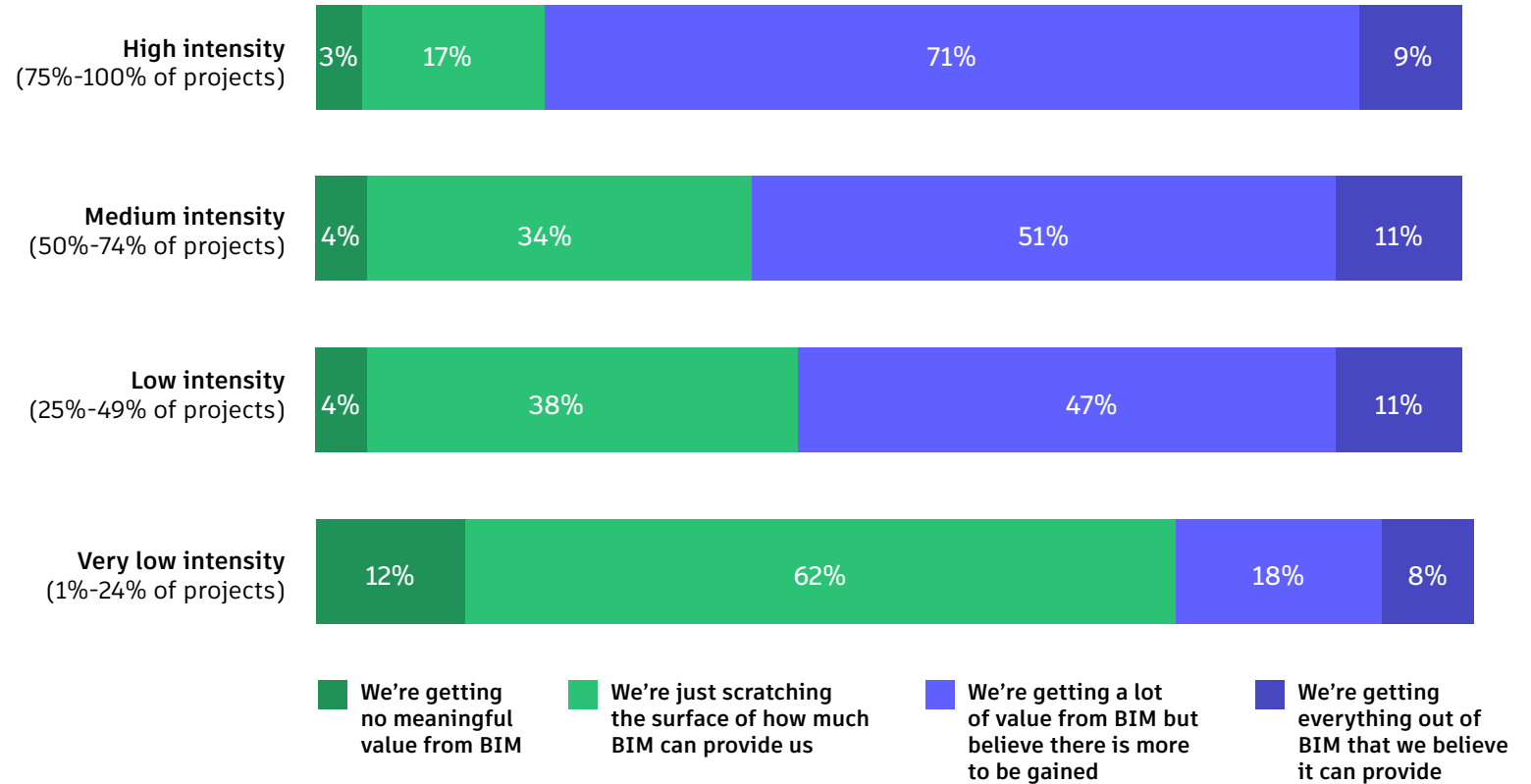
Medium BIM intensity
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Looking at the overall value of BIM now and in the future

Designers and contractors alike are seeing an overall benefit to implementation of BIM in their projects, leading to an increased sense that there is even more value to gain from increasing intensity of BIM usage.

Value of BIM by level of BIM intensity



BIM and digital transformation: making the connection

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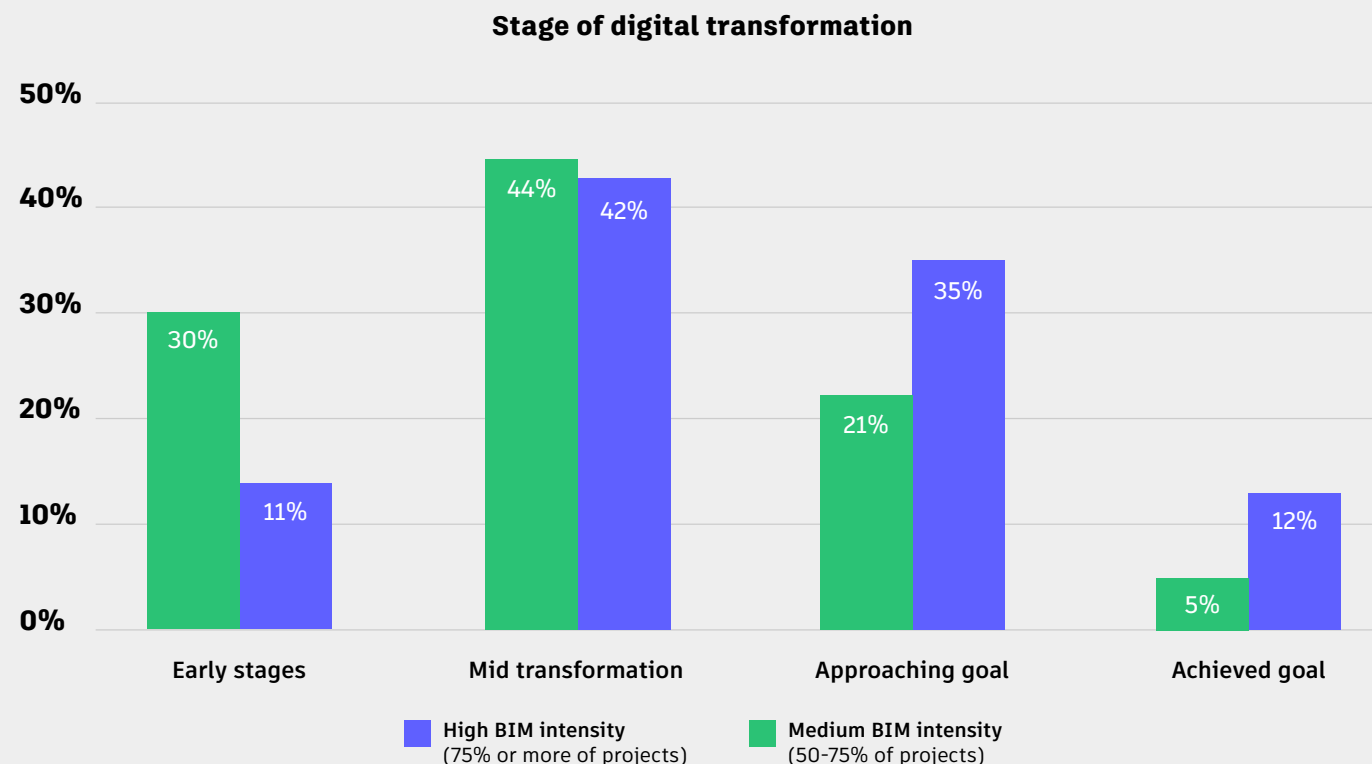
It's my hope that as the industry faces its next set of existential challenges, it will deploy tools like BIM, and eventually AI, in the service of optimizing the entire delivery process.

That will require vision on the part of technology providers, who can define the potential of information itself in the building enterprise, as well as technology consumers, who must be willing to be as innovative in their use of technology.

”

– Phillip Bernstein, FAIA, RIBA, LEED AP – Associate Dean and Professor Adjunct, Yale University

By embracing BIM, firms are also accelerating their digital transformation journey. As the Dodge SmartMarket report shows, high-intensity BIM users consider themselves to be approaching their digital transformation goals at a much higher rate.



Wherever you are in your BIM journey, Autodesk can help you take the next step

As the latest Dodge SmartMarket report, *Accelerating Digital Transformation Through BIM*, shows: BIM is increasingly standard throughout the AEC industry. Is your firm ready?

Whether you are just beginning your move to BIM or pushing into expanding the possibilities of an advanced BIM practice, Autodesk can help you put BIM to work for your firm.

[Read the whole report here.](#)

Your first step to BIM

Get an introduction to BIM practices and BIM-enabling software. [Visit page](#)

Discover the benefits of BIM and find tools for your business type. [Visit page](#)

Uplevel your practice

Take an inside look at 12 projects that are winning with BIM. [Download the case studies](#)

Advance innovation

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