ARCADIS

BIM Adoption in
Philippines

The COVID-19 pandemic has seen digitalization take hold in Construction, and the advancement of Building Information Modelling (BIM) in Philippines over the past couple of years is clear evidence of this. Many who were already planning BIM implementation have been able to move quickly and gain significant benefits during community quarantine periods, however the wider industry stands to take a giant stride forward as adoption spreads rapidly. In an increasingly competitive market, those who establish a clear BIM implementation strategy and invest in managing BIM properly stand to gain during design phases and reduce construction costs.

Digital Strategy

For organizations with a long term stake and large capital investments in the Philippine construction industry, future-proofing their position is critical to the success of their investments. And for project delivery, having a digital strategy entails increasing visibility in project sites, and enabling more informed perspective for decision making.
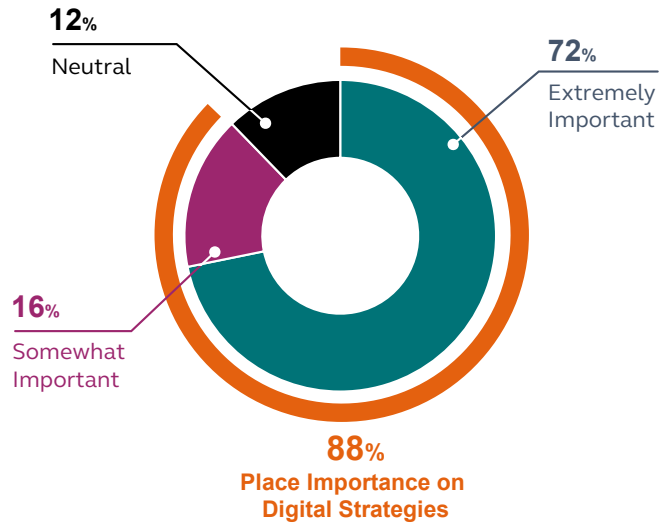
Our experience suggests that having a digital strategy allows organizations to navigate new and disruptive technologies affecting their market, as well as strategically assessing which aspects of their current process can be improved with digital tools.

In a recent survey we conducted, 88% of industry leaders believe that having a digital strategy is important and 72% of all leaders believe that this is extremely important. However, majority of organizations are still observed to be slow to implement digital solutions expected to deliver benefits.
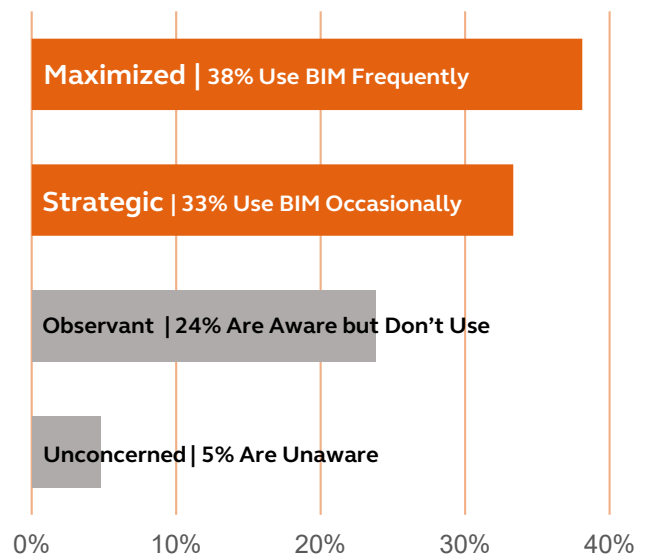
A key component of most organization's digital strategies involves adopting Building Information Modelling (BIM), a process that involves 3D models to better design and build projects, and our survey showed that more than 1/3 of organizations have transformed to a BIM environment. This is a significant shift in the past 18 months, where most users of BIM were using only a few features and running parallel processes with more traditional processes.

This suggests that the venture of organizations into BIM is being done permanently and intended to make a lasting impact on the organization. As the principles of BIM involve a workflow designed to remove miscommunication and miscoordination, the majority of the pain points experienced in "traditional" 2D CAD workflows can be addressed in ways that increase issue visibility and reduce costly errors during the construction stage. Design phases can either include more complexity or be done at a faster speed.

Industry leaders' view on the importance of a digital strategy in their organizations

12%
Neutral

72%
Extremely Important

16%
Somewhat Important

88%
Place Importance on Digital Strategies

Organization's BIM use

Maximized | 38% Use BIM Frequently

Strategic | 33% Use BIM Occasionally

Observant | 24% Are Aware but Don't Use

Unconcerned | 5% Are Unaware

0%   10%   20%   30%   40%

Traditionally, securing management support on initiatives involves a large amount of inertia, and many organizations experience adopting a trend too late and find themselves reacting to competitive pressures rather than realizing benefits. While BIM teams and those that are 'digital natives' tend to be the younger generation, organizations that gain real benefits are led by visionary leaders able to identify and respond to trends and management groups with the agility to act quickly and with urgency.
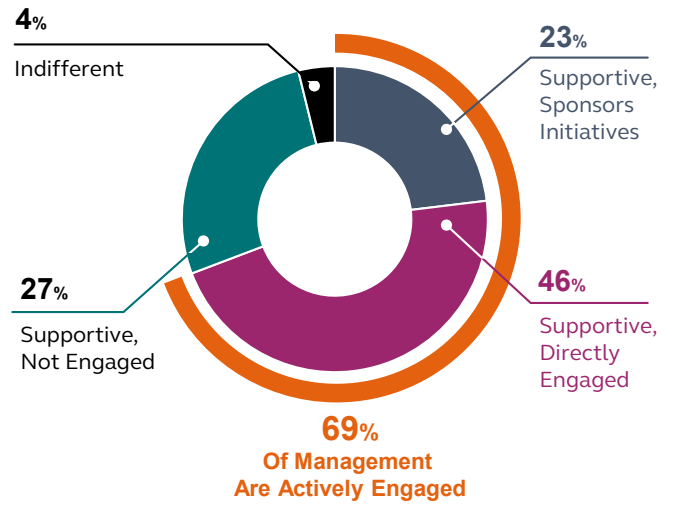
About 69% of industry leaders have management that are supportive and 23% are supportive as well as sponsors of key initiatives. This confirms Arcadis' understanding that most organizations are still slow to implement digital solutions that are expected to deliver benefits.

Among the key benefits expected from BIM, reducing errors was seen as the most important benefit in the new digital workflow. From the survey data, the country's top developers still find that error are still prevalent, even with the most robust and skilled teams. This is unsurprising as coordination using traditional means is highly manual and has a significant 'human' factor which is prone to error, particularly when under time pressure.

With BIM workflows digitally identifying clashes and all teams working in a linked environment, there is clearly significant opportunity for BIM to reduce a key pain point. Further, the accountability provided by the traceability of BIM, owners and developers will be able to identify causes and continuously improve to optimize overall project costs and keep projects on schedule.

Arcadis' Cost Management Group has determined that about 4-5% of construction cost can be attributed to misaligned scope and coordination clashes, in which BIM technology and workflows can be a key part in addressing.

Industry leaders view on management support

4% Indifferent

23% Supportive, Sponsors Initiatives

46% Supportive, Directly Engaged

27% Supportive, Not Engaged

69%
Of Management
Are Actively Engaged

Industry Leader's Top 6 Benefits

1. **Reducing Errors, Omissions, and Rework**

2. **Enhancing Collaboration between Designers and Contractors**

3. **Reducing Construction Cost**

4. **Better Cost Control / Productivity**

5. **Producing Better Quality Developments**

6. **Reducing Overall Project Duration**

Evaluation

The ever growing pain point of miscoordination and miscommunication will continue to motivate the construction industry to find solutions through BIM. Expanding the scope to more than just design coordination but to include site management, cost management, schedule management, and facilities management, will be the key factor in the BIM adoption in the Philippines. The following is our evaluation of the market research:

The importance of a Digital Strategy resonates among industry leaders and management support is growing.

The benefits of BIM are clear to the wider industry regardless of level of adoption at this stage.

Those that have invested in a clear BIM strategy are gaining the most from it and have moved significantly ahead in the past 18 months.

Recommendation

As BIM and other information-centered technologies are getting more and more accessible, organizations must reassess their current processes and standards to determine where areas can be improved. A crucial step is ensuring that a larger goal or objective is establish, so that each individual step is intended to lead to a an overall organizational benefit. The following are our recommendations for industry leaders:

Establish a long term strategy with an expected larger organizational goal. Use the goal as a "North Star" and develop smaller efforts on a roadmap to reach the goal.

Start small and take steps as part of a well thought through plan, increasing in scale and complexity as competency and systems develop. Establishing a role within the organization with the responsibility of monitoring and maintaining aspects of the Digital Strategy is recommended.

Set stakeholder expectations in that they understand the digital journey is long, difficult, and requires support from multiple groups and all management levels. End users expected to take on the technical work must be guided to avoid the feeling of incompetence when using new tools.
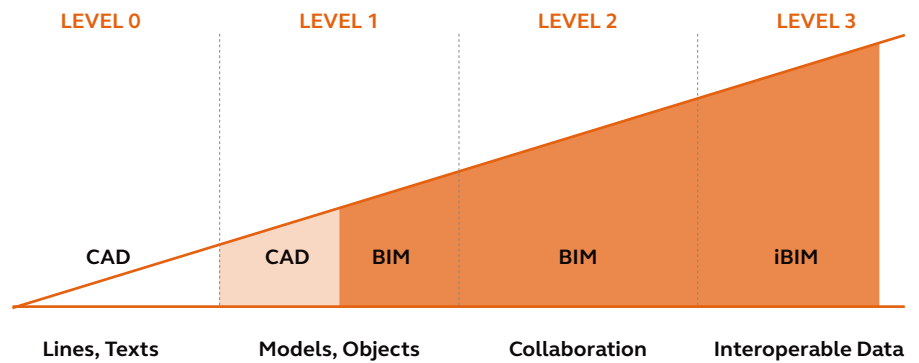
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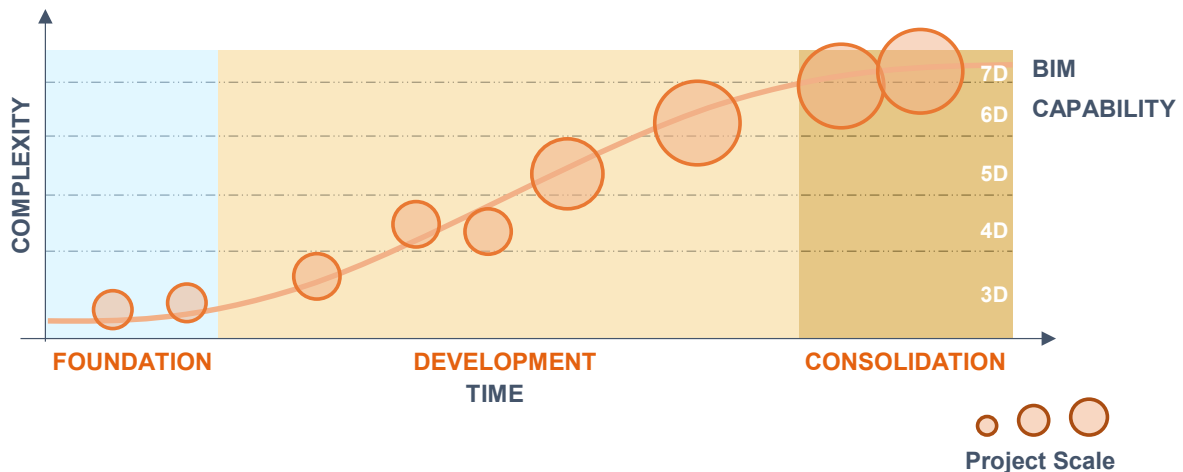
ISO 19650: Global Standard for the BIM process

As Building Information Management (BIM) continuous to change the way the construction sector delivers projects, a standard on the higher levels of BIM delivery became necessary. In 2018, the British Standards Institution (BSI) with guidance from construction industry professionals has released the BS EN ISO 19650 Part 1 (On Concepts and Principles) and Part 2 (On Delivery Phase of Assets), with Part 3 (On Operational Phase of Assets) and Part 5 (On the Security Minded Approach) released in 2020.

Already widely adopted globally, ISO 19650 aims to provide a clear understanding and a process on how and what information should be exchanged, stored, and analyzed in a BIM environment.

Although BIM professionals have been accustomed to the previous standards (PAS 1192-2:2013 and BS 1192:2007 + A2:2016), adopting ISO 19650 will not have a major impact on how BIM is being managed in projects.

The goal of the process standardization through ISO 19650 was to encourage the greater adoption of BIM, to significantly improve sector productivity and to deliver benefits shareable between clients and their supply chains by updating and encompassing the existing standards.

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3
CAD	CAD BIM	BIM	iBIM
Lines, Texts	Models, Objects	Collaboration	Interoperable Data

Understanding the BIM Levels

Level 0
Information is disorganized and plans are inconsistent

Level 1
Information is disorganized and models are utilized for visualization

Level 2 (ISO 19650)
Information is centralized and models are utilized for higher BIM dimensions

Level 3
Information is centralized and models are utilized throughout the asset lifecycle

Those who want to adopt BIM, must consider the following:

Utilize a Common Data Environment

- The central idea for ISO 19650 involves reframing the way information is perceived in projects. Improperly exchanged information, or 'multiple sources of truth' is the root cause for many project issues. Utilizing a Common Data Environment gives project teams the necessary tools to track, update, and analyze information consistently across different project members, all with clear accountability and transparency.

Develop a long term strategy for BIM adoption and standardization

- More companies are now understanding the business case for adopting digital solutions, however the breadth of what is possible is daunting, it is forever changing and integration comes with a cost. Setting clear expectations, and developing a clear BIM strategy with a benefits case is critical. This extends to setting up each project BIM Execution Plan with the overall strategy in mind.

Engage partners who have the right mindset for innovation

- Not all construction consultants in design, engineering, cost, project management and other specialized disciplines have invested in digital technology and possess the right experience and competencies to guide their clients. It is important that executives appoint consultants that can be partners in innovation and have a belief in the journey.

About Arcadis

Arcadis is the leading global Design & Consultancy firm for natural and built assets. Applying our deep market sector insights and collective design, consultancy, engineering, project and management services we work in partnership with our clients to deliver exceptional and sustainable outcomes throughout the lifecycle of their natural and built assets. We are 27,000 people, active in over 70 countries that generate €3.3 billion in revenues. We support UN-Habitat with knowledge and expertise to improve the quality of life in rapidly growing cities around the world.

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