



Executive Insights

A framework to prioritise the right trends in a changing construction and building materials sector

Key takeaways

- Businesses in the global construction and building materials sector are being exposed to a long and rapidly changing set of disruptive market trends
- Organisations that can focus on developing a strategic response to the right trends will provide themselves the best chance for profit growth
- L.E.K.'s construction trend prioritisation framework allows executives to find the insight of those priority trends amongst the noise of their market, irrespective of their product, service or value chain positioning
- This framework provides executive teams with the ability to focus on developing the capabilities and distinctive customer propositions to win in their markets

The global construction and building materials sector is poised for rapid change in the next five to ten years as the needs of channel partners and end users adapt on a wide scale. And while this change is part of a much longer-term evolution in construction methods and regional demographics, the rate of change is likely to be faster than we have seen before.

Executives within the sector are being asked to accommodate a broad range of changes in their business strategies, including improvements in material characteristics, increases in digital engagement, new methods of installation and adaptive supply chain processes. These are changing the speed of construction, the performance of the end product and the efficiency of business models. The sheer number and range of these trends make the collective impact incredibly broad and disruptive, but not all will

have lasting impact on the organisation. Some may be delayed by the COVID-19 crisis, while others will surge ahead at an even greater rate. It is crucial for organisations to understand which of these trends will affect their business and in what time frame. Companies that ignore the changes around them and do not evolve are at risk of disintermediation by innovative businesses, loss of advantage in cost position or wholesale change to the business model.

However, it can be difficult for organisations to determine where to focus their attention given the volume of changes afoot. Through recent work within the construction sector, primarily in Australia, Europe and the U.S., we have identified six macro themes with global relevance and reach, underpinned by 25 trends that have specific implications for participants. Recognising that organisations have finite resources to respond to their external market, L.E.K. Consulting has developed a prioritisation framework that supports executive teams across the construction value chain and in any jurisdiction, to select the most important trends for their business and to provide confidence on where they should commit their resources in the future.

What are the key trends driving the construction industry?

The global economy has undertaken massive development in the past 30 years, and the drivers that have changed our world are continuing to have an impact. In conjunction with a global population that has grown by nearly 50%, we have seen an increase in the basic wage for many countries, a significant reduction in interest rates leading to a disproportionate appreciation of real estate assets relative to financial ones,

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increasing awareness of the limitations of our planet's natural resources, a step change in global expectations for managing the health and safety of workers, and revolutionary advances in technology. The expectations and habits of our populations today are fundamentally different from what they were, and they will continue to adapt in the future.

These global changes are expected to have an increasingly significant impact on the construction sector, and L.E.K. has identified 25 unique trends in the construction sector across its full value chain. While each on its own has the potential to disrupt individual firms within the value chain, the breadth and co-ordination of trends introduces an increased level of complexity for firms in the sector. These trends can be aggregated into six macro themes that span social and environmental trends, material and processes innovation, and the digitisation of business models. Figure 1 details this hierarchy.

Each of these trends shows existing signs of development, but the rate of change, jurisdictions of focus and expectations for the future differ markedly.

Demographic shifts

According to the UN, the proportion of world population over 65 years old is rising and will reach an expected 9.7% by 2050. However, this figure hides a number of societies where the proportion is already markedly higher and will continue to be so (e.g. 18% of the UK population is over 65¹ and 20% of the Thai population will be over 60 by 2021²). An older population underpins significant spend in aged care facilities and co-living arrangements, but it also impacts average workforce age and availability. In Australia, retirement village units grew at c.12% p.a. between 2012 and 2014 and are expected to double in number between 2015 and 2025³.

Demographic shifts impacting the rising cost of housing relative to income (for instance in the US., where the median home price was unaffordable for the average wage earner in 66% of counties in Q1 2020⁴) will drive demand for lower-cost materials and affordable housing. In Malaysia, the national government intends to build 1 million affordable homes in the next 10 years

Figure 1
Construction trends hierarchy



Underlying construction trends

1. Demographic shifts	2. Environmental protection	3. Health/safety	4. Materials/product innovation	5. Supply chain modernisation	6. Digitalisation
<ul style="list-style-type: none"> Construction labor shortages and an aging workforce Relative growth of multi-residential construction Housing affordability and government action Community living 	<ul style="list-style-type: none"> Increased environmental consciousness Alternative/recycled materials Energy efficiency in buildings Water conservation/improvement 	<ul style="list-style-type: none"> Safety of building materials for residents Safety in production and installation for employees 	<ul style="list-style-type: none"> More cost-efficient materials More durable/effective materials Innovation in building material applications Products customised to customer trends (e.g. outdoor living) 	<ul style="list-style-type: none"> Automation of construction methods Modular and semi-modular construction Prefabricated construction components Building information management Optimising globalised supply chains 	<ul style="list-style-type: none"> Digitalisation of manufacturer-to-contractor relationship Increasing manufacturer to consumer engagement Online marketplaces Increase in DIY engagement Automation and digitisation in design and manufacturing Small format stores with ecommerce

■ Social and environmental trends
 ■ Material, process technological trends

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under the PR1MA programme. Build-to-rent business models will also be increasingly incorporated into government policy. The UK government introduced its build-to-rent initiative in 2012 to combat its housing crisis, using government funding to support the development of large housing projects built specifically for renting⁵.

Housing costs will also support the demand for multi-residential and community living, and we are starting to see rapid changes in government policy in some markets (e.g. new rent controls and associated implications in multiple markets).

Environmental protection

Consumers increasingly are environmentally conscious and demand products and services that consider resource scarcity, although the level and pace of the change varies by end market. For instance, a 2019 survey found that c.78% of Australians were concerned about climate change, up by 12% from 2014⁶. And a recent report from the Asian Development Bank estimated that climate change could shave off 11% of the Gross Domestic Product in South East Asia by the end of the century⁷.

For products such as cement, which contribute almost 8% of global greenhouse gas emissions⁸, companies are responding to consumer demands through the use of alternative cementitious products (such as blast furnace slag, fly ash and pozzolan materials). Further, they are reducing primary energy consumption through the use of waste products (such as car tyres). Recycled materials, such as railway sleepers, are becoming increasingly adopted, and government policy continues to increase the requirement for energy efficiency in buildings. This is a significant opportunity given that the buildings sector accounts for 36% of global final energy use⁹.

Water can be both a scarcity issue and a quality issue, depending on the jurisdiction. Further, consumers care about the scarcity and quality of water; c.87% of US consumers said clean drinking water is very important to them¹⁰, resulting in government action such as the inclusion of water conservation in California's Building Efficiency Energy Standards. This measure alone has led to a step change in requirements for companies and illustrates how change can suddenly accelerate.

Health and safety regulation

Societies are becoming less tolerant of risks to the health and safety of workers and consumers. An increasing focus on the safety of building materials for residents has led to a shift away from certain products, such as use of volatile organic compounds. Similarly, there is greater attention towards the safety of workers. For example, Safe Work Australia has set a specific target of a 20% reduction in the number of worker fatalities due to injuries to be achieved by 2022¹¹, which has implications for how construction projects are managed and the products and training that are required. While enhanced safety has usually been about

continuous change, step changes in regulations such as these can require building products companies to make more rapid changes.

Materials/product innovation

The rising cost of housing and an increasingly competitive building materials industry have driven significant materials and product innovation as companies seek more cost-effective materials to gain a competitive edge. As an illustration, the global market for engineered wood, which saves cost and time compared with traditional materials, is forecast to grow at c.25% p.a. to \$41 billion by 2022¹². Further, customer demands are driving greater customisation and are enhancing the relative importance of key categories. For instance, in recent years there has been a greater focus on outdoor living. Finally, innovation in building design and construction is delivering additional utility and features for end users (e.g. technology integrated into products), with a potential to change the frame of competition for some product categories (e.g. adoption of rooftop solar changing the roof purchase decision). As innovations occur in sensors, voice recognition and drones, there will be implications for construction in areas such as the adoption of technology in kitchen appliances and drones detecting deterioration in external building products, with potential flow-on to areas such as product warranty.

Modernisation of construction supply chain

For many years, industry players sought to reduce costs and minimise rework through building information management (BIM) systems. Recently, industry participants have been increasingly leveraging technology to reduce costs and/or address skilled labour shortages. Builders are expanding ways to conduct more processes off-site, with prefabricated construction components or through modular and semi-modular construction. The global modular construction market is projected to grow from c.\$92 billion in 2018 to c.\$130 billion by 2023, at a CAGR of ~7%¹³. Although at an early stage, automation of construction methods is being developed, and the global construction robots market is expected to increase from \$60 million in 2017 to \$166 million in 2023¹⁴. Above all, trade tensions and the ongoing impact of COVID-19 are forcing manufacturers, distributors and builders to determine how to optimise their supply chains, which have become truly global.

Digitalisation

Digitalisation has changed many interactions, and the manufacturer/contractor relationship is no exception. A recent L.E.K. survey found that 74% of contractors access manufacturer websites directly. Contractors are also exploring online marketplaces, and the same survey found 42% of US residential contractors use online-only retail sites. Other models have emerged to serve the digital contractor, such as small format stores that are integrated with ecommerce (e.g. Fastenal, an industrial distributor, has 65% of its national account customers

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use its ecommerce services¹⁵). Consumers are interacting digitally with manufacturers and are engaging with online content, increasing the portion of DIY sales. Manufacturers are also applying digitalisation to their own operations through automation and digitisation in design and manufacturing. Virtual reality/visualisation, 3D printing technology and other automated processes are being introduced within the manufacturing process. For instance, WinSun in China built ten 200-square-metre houses in a day by using an industrial-scale 3D printing machine to print walls in a factory for assembly on-site¹⁶.

Seeking the insight among the noise

It is obvious from the short discourse above that the potential disruptive change is both broad and deep, and participants in the construction sector need to be selective in the way they respond to the largest potential changes in their markets. The global trends have influence in many markets, but their importance to each individual company will vary, in some cases having a transformative effect and in other cases being less relevant. These trends may also impact several parts of an organisation — and so while the operations team is busy managing a loss of cost advantage, the marketing team may be completely overwhelmed by the sustainability needs of their customers. This matrix of impacts creates challenges in identifying and then responding to the most critical trends across business units and/or geographies.

To support executives, L.E.K. has developed a prioritisation framework (Figure 2) as a means of focusing the organisation's resources and then developing the appropriate response to the most critical trends that shape the market for each participant.

Executives across the value chain in the construction sector should ask themselves three key questions in order to identify the key trends and build the optimal strategic response.

- **Is the trend meaningful and relevant within the environment where my business participates?**

Not all trends will be meaningful in all geographies. The impacts of each trend will be different depending on market value chain dynamics, competitive intensity, regulatory environment and other barriers to change, and possibly even regional endowment of specific resources. It is key for executives to consider the risk of a trend becoming a reality in their local market.

- **Does the style, scale and expected timing of change create an urgency for response?**

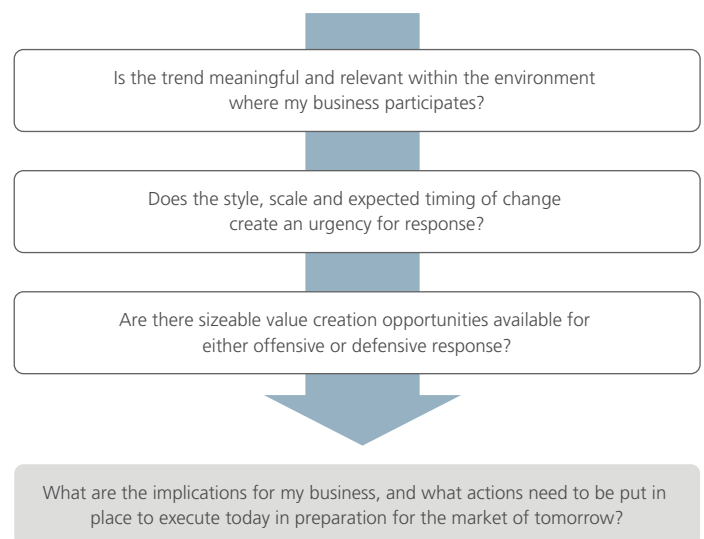
Executives will want to get ahead of any situation where an urgent response is required against a trend that has created a large-value, step-change disruption in their market. Executives should therefore look to understand how and when each relevant trend will impact their market. Some trends will evolve slowly and response can be incremental, while others will create step changes in business model or customer offer,

creating first mover advantage for innovative companies. The timing of that change will differ for each trend in a geography, and an assessment of the drivers of and barriers to growth is critical to determine the likely time of impact. Finally, the scale of impact will be different by geography, and identifying those trends with the highest likely impact will ensure effective prioritisation.

- **Are there sizeable value creation opportunities available for either offensive or defensive response?**

In most cases, executives have two broad options in responding to each trend, depending on their existing strategic positioning: seek to benefit from opportunities within new profit pools, or defend the status quo. Both can impact future profitability. And while the participation itself is important, an assessment of the offensive or defensive value to be gained, capabilities required for, and risks of implementation is also required before a company can embark on determining a strategic agenda in response to the priority trends.

Figure 2
L.E.K.'s construction trend prioritisation framework



By honestly and proactively assessing their specific organisation against the 25 trends identified, companies give themselves the best chance of finding the most important trends likely to impact their sector in the medium term. Not only can companies then seek profitable growth over that time horizon, but they also can avoid the need to defend their turf against a fast-moving competitor. With the key trends identified, companies can develop the detailed action plan that ensures an effective response to their potential future environments and then delegate accountability to the most suitable teams for executing the new strategy.

Case studies

Case study 1: Modular and semi-modular construction

Prefabrication and modular construction are moving a significant number of activities away from the construction site and into the factory, even offshore in some cases. Modular construction aims to reduce costs incurred in on-site construction, reduce time of overall build, and improve quality and consistency of the construction components. It is also bringing together a new operating model, where innovative companies are tightly integrating the full process of design to construction, with strong supply chain partnerships as well as use of off-site construction technologies.

Modular construction is being driven by a combination of growing shortages in construction skills and housing supply, an increased demand for lower-cost dwellings, product innovation that has resulted in improved quality perception, and continued changes in the differential costs of efficient production versus increased transportation.

In the US, the prefabricated home manufacturing industry has seen c.8.5% annual growth since 2014, with 90,000 prefabricated manufactured homes in 2017¹⁷. In the UK, the residential permanent modular market is expected to grow at c.14% p.a.¹⁸ The Japanese prefabricated home industry contributes c.15% of housing today, with approximately 140,000 prefabricated homes per annum¹⁹. Since November 2014, Singapore's Building and Construction Authority has stipulated that selected sites offered in the Government Land Sales programme must adopt the use of prefabricated volumetric construction for at least 65% of the total constructed floor area within residential developments. The global response to COVID-19 is unlikely to stall this trend; in fact, it may accelerate the change as factory-based workers can be more easily protected from viral transmission through the use of space protocols and physical shielding than on-site workers that are more fluid in their activities.

Companies like Hickory Building Innovation in Australia, Ambar in Brazil, ilke Homes in the UK and Schwoerer Haus in Germany have built businesses focused on developing the technology and business models to benefit from the trend towards modular and semi-modular construction.

Case study 2: Environmental protection

Increased environmental concern is being driven by more frequent extreme weather events. Further, organisations are facing rising energy costs, stricter compliance requirements,

more environmentally conscious consumers and a greater choice of innovative products along the building materials value chain.

Companies are adopting practices such as recycling, sustainable sourcing and using alternative materials (low energy/low carbon) to reduce the dependency on scarce resources, drive energy efficiency, and conserve or improve water quality. They are also reaching out beyond their own walls to create partnerships that respond to these needs.

The World Green Building Trends study²⁰ stated that in 2018, 27% of all global participants had majority (more than 60%) 'green' projects in their companies and predicted that this share would increase to 47% by 2021. The study questioned over 2,000 people in the building materials sector, and a green building project had to meet a number of criteria, including efficient use of resources, pollution and waste reduction measures, good indoor air quality, and consideration of the environment during all stages of the building life cycle.

Examples of environmentally conscious companies include Xylem, a US company that develops innovative water solutions through smart technology, and Allied Concrete, a New Zealand-based company that offers a sustainable concrete product made from recycled glass.

Case study 3: Increasing manufacturer to consumer engagement

Manufacturers are rethinking business models and looking to connect more directly with end customers by creating tailored websites and marketplaces. In addition to improving customer satisfaction, companies are gaining direct access to customer information/data from these digital platforms, which they can use to better understand buyers' motivations and needs. Additional drivers include greater consumer engagement in home renovations, increased adoption and availability of big data analysis software, and machine learning for automation of customer engagement.

There are likely to be significant changes to the ways of working as a result of COVID-19. The entire building materials value chain may be disrupted, and distributors may be disintermediated as manufacturers use digital mechanisms to go straight to the consumer.

Examples of manufacturers that engage with their consumers through digital channels include Simpson Strong Tie in the US, Xella in Germany and Braas Monier Building Group in Luxembourg.

The value of swift and effective action

Executive teams that respond to these globally significant trends in an incremental fashion, preferring to maintain a broadly status

quo strategy in the face of potential market disruption, risk the competitive positions that they currently enjoy. While many trends will be incremental for some sectors, proactive assessment of

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those that may quickly accelerate or create larger impact on the organisation will allow the organisation to both prepare for and take advantage of the opportunities presented.

For instance, housing affordability, after being a 'slow burn' issue in many markets for a decade or more, has had some sudden government action, such as statewide rent controls in New York and California. Other examples include innovative major building developments that have been required to devote a portion of units to affordable housing, such as build-to-rent initiatives in the UK and Kiwibuild in New Zealand. Similarly, innovation in building products has been forced to accelerate to match customer needs and expectations. For example, flat pack kitchens are a disruptive product that offers a lower-cost, quick-to-install alternative to custom-made kitchens. They have achieved high market share in Europe, with almost half of kitchen renovations in Denmark and Sweden using flat pack kitchen cabinets²¹. The COVID-19 pandemic is expected by some commentators to accelerate outdoor living (for instance, IHS Markit estimates that lawn and garden may be one of the few categories to experience any real growth in 2020).

Given the speed at which the world is changing, investments and actions required to address trends need to be taken in advance to ensure that the customer proposition, key organizational capabilities and new business structures can be implemented before the trend becomes most apparent. Organisations that can successfully prioritise their activity towards the trends of greatest opportunity (and risk) should find themselves best able to secure future profits and competitive position in their markets.

Conclusion

The building materials industry is complex, with an ever-changing landscape. L.E.K.'s construction trend prioritisation framework offers a structured approach for organisations to quickly identify the most important trends in their local jurisdiction and build a strategic response that provides the best chance for profit growth in the medium term.

Executives who can quickly identify the most important trends, build the required capability to address them and offer distinctive value propositions to customers will fend off disruption to ensure they continue to win in their market.

Endnotes

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About the Authors



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