

CIRAS Construction Industry Needs Assessment

2024

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Executive Summary

The CIRAS Construction Industry Needs Assessment (2024) provides a comprehensive analysis of key challenges and opportunities shaping Iowa's construction sector. The survey received 92 responses from construction companies across the state of Iowa. Participants represented a diverse cross-section of the industry, including building construction contractors, specialty trade contractors, and heavy & civil engineering contractors. This broad participation provides valuable insights into the challenges and opportunities facing construction firms across different sectors. This report synthesizes survey data, industry research, and economic trends to assess workforce shortages, technology adoption, business strategies, and market forces affecting construction businesses in the state. The goal is to identify critical industry needs and inform actionable strategies for business growth, efficiency improvements, and workforce development.

Key findings include the following:

1. Workforce Shortages Continue to Hinder Growth

- 77% of firms struggle to fill positions, with hiring difficulties expected to worsen.
- Iowa's construction workforce remains male-dominated (85%).
- Wage growth has outpaced the statewide average, yet labor supply remains inadequate.

2. Technology Adoption Lags Despite Recognized Benefits

- Only 25% of firms invest in automation or robotics, and 69% have no AI investment.
- Barriers to technology adoption include capital constraints, workforce training gaps, and unclear return on investment (ROI).
- Firms leveraging BIM (Building Information Modeling), AR/VR (Augmented Reality/Virtual Reality), and drones report positive results.
- Construction firms are beginning to explore manufacturing-inspired efficiencies, such as prefabrication and modular construction, to improve project timelines and quality control.

3. Economic Pressures

- Thin profit margins persist due to rising material and labor costs.
- 39% of firms report project cancellations due to high interest rates and insurance costs.
- Federal Infrastructure Investment and Jobs Act (IIJA) funding presents growth opportunities, with 30% of firms currently working on IIJA-funded projects.

4. Industry Structure and Competitive Pressures

- The construction industry remains highly fragmented, with intense competition limiting pricing power.
- Large firms benefit from bulk purchasing power in negotiations, while smaller firms face cost volatility.
- The integration of manufacturing principles, such as off-site construction and industrialized building processes, is emerging as a way to enhance efficiency and reduce dependency on labor availability and mitigate weather delays.

As a result of the analysis, CIRAS identified the following core items as the critical needs of Iowa Construction to remain competitive:

Workforce Development Initiatives

- Expand vocational training, apprenticeship programs, and high school outreach to attract younger workers
- Promote efforts to encourage broader workforce participation

Strategic Technology Adoption

- Develop clear ROI models and cost-benefit analyses to help firms justify investments in automation, AI, and prefabrication
- Offer industry workshops and pilot programs to assist companies in mitigating implementation risks
- Strengthen collaborations between businesses and educational institutions to align skills with advancements

Business Resilience and Market Expansion

- Encourage firms to adopt project management processes and continuous improvement efficiencies to enhance margins.
- Promote collaborative industry networks where firms can share best practices and lessons learned from technology adoption.
- Support firms in leveraging federal and state infrastructure funding and alternative financing models to sustain business growth.

Conclusion

Iowa's construction industry is at a crossroads, facing workforce shortages, rising costs, and a slow pace of technological adoption. However, significant opportunities exist through strategic workforce development, innovation adoption, and process efficiencies. The industry's gradual integration of manufacturing-inspired practices, such as prefabrication and modular construction, presents new pathways to improving efficiency and reducing labor dependency.

At the same time, demand for construction services is projected to grow, driven by infrastructure needs and broader economic trends. However, potential policy shifts—such as changes to environmental regulations, labor policies, and trade tariffs—could introduce both opportunities and challenges. By addressing the barriers outlined in this assessment, the industry can build a more sustainable and competitive future while positioning itself to meet rising demand effectively.

The State of Iowa Construction Overview

At the state level, Iowa’s construction industry is a major contributor to the economy, employing over 85,000 workers across 9,500 businesses and generating \$7.6 billion in gross revenue. The breakdown of employment in Iowa’s construction industry is like national trends but with a higher concentration of specialty trade contractors:

- Specialty Trade Contractors – 63.5%
- Building Construction Contractors – 19.5%
- Heavy & Civil Engineering Construction – 17%¹

The sector has demonstrated steady growth, adding 13,498 jobs between 2013 and 2022. This job expansion has been accompanied by wage growth, with the average annual wage in the construction sector reaching \$66,480, which is higher than the statewide average of \$57,378 for all industries

Workforce demographics in Iowa’s construction industry show a strong male dominance, with 85.9% of workers being men and 14.1% being women. This gender disparity reflects national labor trends in the construction sector and underscores the need for continued efforts to broaden the workforce.¹

Industry Analysis

National Overview

The U.S. construction industry is a significant economic driver, employing over 10 million workers across 4 million businesses and generating \$3.3 trillion in total revenue. The industry's net profit margin stands at 6.6%, reflecting a competitive but profitable market.² Despite its size, the industry remains highly fragmented, with the top four companies holding less than 1% of total market share, suggesting a market structure that aligns with perfect competition.²

¹ Iowa Workforce Development. 2022 Iowa Industry Profile-Construction Industry. Iowa Workforce Development, 2022.

² www.ibisworld.com

The industry is divided into three primary sectors:

- Specialty Trade Contractors – 43%
- Building Construction Contractors – 41%
- Heavy & Civil Engineering Contractors – 13%

According to IBISWorld, “while slowed by high interest rates, the [construction] sector is set to expand as the economy recovers from the COVID-19 pandemic, supply chain issues, and high inflation”.² Future growth will be influenced by federal infrastructure spending, advancements in construction technology, and a sustained demand for both residential and commercial projects.

Porter’s Five Forces

The construction industry is a dynamic and competitive sector influenced by numerous external forces that shape its profitability and long-term sustainability. To better understand the competitive pressures facing construction firms, it is useful to apply Porter’s Five Forces, a framework developed by economist Michael Porter.³ This model identifies five key factors that determine the competitive intensity and attractiveness of an industry: the threat of new entrants, the bargaining power of suppliers, the bargaining power of buyers, the threat of substitutes, and industry rivalry.

By analyzing these forces, businesses can uncover critical insights about market dynamics, competitive positioning, and strategic opportunities. In the construction industry, factors such as capital requirements, regulatory constraints, supply chain dependencies, shifting customer expectations, and technological advancements all play a role in shaping industry competition. Understanding these pressures allows firms to develop strategies that enhance resilience, improve profitability, and maintain a competitive edge in a rapidly evolving landscape.

Threat of New Entrants

- The construction industry has moderate barriers to entry, with new firms needing significant capital to acquire equipment, licenses, and skilled labor.
- However, the fragmented nature of the market (with small firms dominating) makes it possible for new players to enter.
- Strict regulatory and safety compliance requirements create additional challenges for new entrants.

³ <https://www.isc.hbs.edu/strategy/business-strategy/Pages/the-five-forces.aspx>

Bargaining Power of Suppliers

- Suppliers of raw materials (steel, lumber, concrete, etc.) hold moderate to high bargaining power, especially during supply chain disruptions.
- Fluctuating material costs and tariffs impact project costs, making it harder for construction firms to maintain consistent pricing.
- Large firms with bulk purchasing power have an advantage in negotiating better terms.

Bargaining Power of Buyers

- Customers, including governments, businesses, and individuals, have moderate bargaining power depending on project size.
- In commercial and infrastructure projects, government contracts hold significant influence over pricing and compliance requirements.
- High competition forces many firms to compete on price, quality, and service, giving buyers leverage in negotiations.

Threat of Substitutes

- There are limited direct substitutes for construction services, but emerging prefabrication, modular construction, and 3D printing technologies could reduce demand for traditional methods long-term.
- Sustainable materials and energy-efficient buildings are shifting market expectations, requiring firms to adapt to new construction techniques.

Industry Rivalry

- The industry operates under perfect competition, with millions of small and medium-sized businesses competing for projects.
- Margins remain thin due to price competition, but firms can differentiate by adopting technology, automation, and prefabrication.
- The shift toward integrated project delivery and design-build models is increasing collaboration between firms.

SWOT Analysis

To navigate the complexities of the construction industry, businesses must assess both internal and external factors that impact their success. One widely used strategic tool for this purpose is the SWOT Analysis, which evaluates an industry's Strengths, Weaknesses, Opportunities, and Threats.⁴ This framework helps businesses identify competitive advantages, address challenges, and capitalize on market trends.

⁴ <https://www.investopedia.com/terms/s/swot.asp>

By conducting a SWOT analysis, construction firms can gain a comprehensive understanding of their position in the market, enabling them to make informed strategic decisions. Strengths highlight internal advantages that help firms grow and remain competitive, while weaknesses expose areas requiring improvement. Opportunities represent external factors that firms can leverage for expansion, and threats identify challenges that could hinder success.

This section focuses on the strengths of the construction industry, examining the key factors—such as strong market demand, wage competitiveness, infrastructure investment, and process efficiencies—that provide a solid foundation for long-term stability and growth. Understanding these strengths allows industry leaders to build on what works while preparing for future challenges.

Strengths (Internal advantages helping the industry grow and remain competitive)

1. *Strong Market Demand*

- The Iowa construction sector has demonstrated consistent growth, adding over 13,000 jobs from 2013 to 2022 (Iowa Workforce Development).
- Nationally, 44% of firms expect the dollar value of projects to increase in 2024, indicating sustained demand.

2. *High Wage Competitiveness*

- The average annual wage for Iowa's construction workers (\$66,480) exceeds the statewide average for all industries (\$57,378), making it a competitive-paying industry.⁵

3. *Public Infrastructure Investment*

- Federal funding through the Infrastructure Investment and Jobs Act (IIJA) supports growth in transportation, bridges, and public works.
- Iowa's heavy & civil engineering sector (17% of industry employment) is positioned to benefit significantly from infrastructure projects.

4. *Market Differentiation Through Quality & Service*

- Survey data shows that over 50% of firms identify superior customer service/reliability as their primary business strategy, with 30% focusing on better quality. This suggests that firms compete on value rather than price, reinforcing long-term industry stability.

⁵ 2024 Construction Outlook National Survey Results. AGC, 2024.

5. *Process Efficiency & Potential for Lean Construction*

- Iowa's construction sector could benefit from adopting lean manufacturing principles to improve efficiency and reduce costs.
- Prefabrication and modular construction could enhance quality and shorten build times by leveraging off-site manufacturing.

Opportunities (External factors that could help the industry expand and improve efficiency)

Government Infrastructure Investments

- Federal and state funding for roads, bridges, and public buildings will drive industry growth.
- 30% of firms are working on new IJIA-funded projects, and 33% plan to bid on federally funded jobs.⁵ However, future availability of federal funding remains uncertain, as potential policy shifts could impact infrastructure investment levels, regulatory requirements, and overall project funding stability.

1. *Market Penetration & Business Growth Strategies*

- The top driver of increased profits in the next five years is expanding market penetration with current products/services, according to survey data.
- Firms that invest in product/service development will likely see long-term profitability gains.

2. *Technology & Efficiency Improvements*

- While technology adoption is mixed, firms investing in automation, AI-powered project management, and prefabrication could significantly improve profitability.
- 38% of firms plan to increase investment in project management software in 2024.⁵
- Survey data indicates that technologies like BIM, AR/VR, and drones have met or exceeded expectations, while some firms have faced challenges in AI and automation adoption.
- Construction-integrated manufacturing presents an opportunity to enhance sustainability, improve efficiency, and reduce labor dependency.

3. *Workforce Development & Training Programs*

- Expanding apprenticeship and vocational training programs can help address labor shortages.
- Encouraging broadened workforce demographics to enter the field could help diversify Iowa's construction workforce (currently, 86% of Iowa's Construction workforce is male)¹
- Tapping into the High School Pipeline: Developing outreach programs and partnerships with high schools to introduce students to construction careers through internships, job shadowing, and hands-on training programs can provide a long-term solution to workforce shortages.

Threats (External risks that could negatively impact the industry's growth and stability)

1. *Workforce Availability is the Biggest Barrier to Growth*

- Survey data shows that inadequate availability of hourly and salaried workforce is the top-ranked growth inhibitor.
- This aligns with AGC findings that 77% of firms report hiring difficulties.

2. *Economic Downturn & Rising Interest Rates*

- Rising financing costs and economic slowdown risks could reduce investment in private construction projects.⁵
- 25% of firms expect office and retail construction to decline in 2024.⁵

3. *Slow Adoption & Industry Resistance to Manufacturing Integration*

- Construction firms that fail to integrate advanced manufacturing techniques risk falling behind in efficiency and competitiveness.
- Capital-intensive nature of prefabrication and automation may deter firms from investing, creating barriers to adoption.

4. *Technology Implementation Barriers & Financial Risk*

- Firms struggle with identifying the right technology applications, training workforce, and ensuring ROI, according to the CIRAS Construction Industry Needs Assessment Survey 2024.
- Capital constraints and perceived risks of implementation limit tech adoption, particularly in AI, robotics, and cybersecurity.

Profitability in Construction Industry

The analysis of profit margins in the construction industry highlights a significant gap between targeted and actual profitability levels, underscoring key challenges faced by firms in maintaining desired margins.

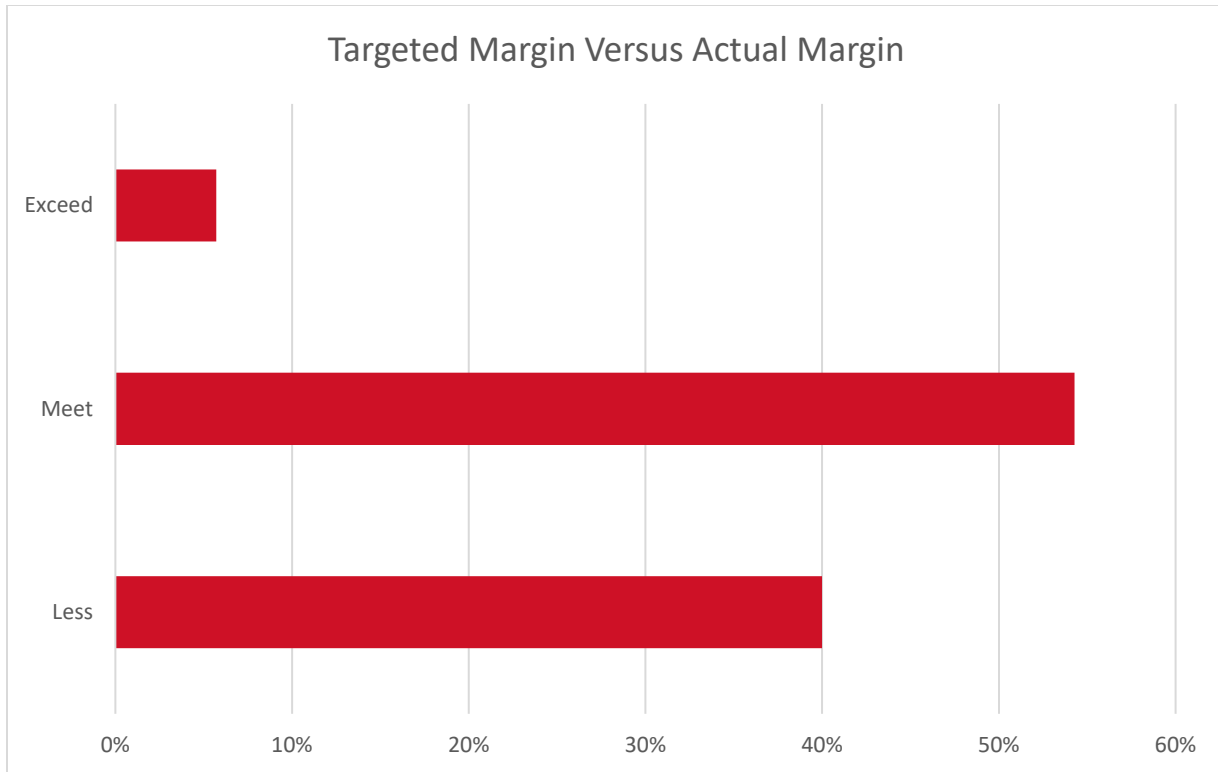
Most construction companies aim for profit margins in the 10-19.9% range, with a considerable number targeting higher margins of 20-29.9%. However, actual performance often falls short of these goals, particularly in the 20-29.9% range, where the discrepancy between targets and results is most pronounced. The data reveals that more companies end up achieving lower margins (0-9.9%) than originally targeted, suggesting widespread difficulties in sustaining higher profitability levels. Despite these challenges, the 10-19.9% range shows the highest alignment between target and actual margins, indicating that firms are generally more successful at meeting expectations within this category.

Many construction firms report actual profit margins between 10-19.9%, followed closely by those achieving 0-9.9%. Very few companies manage to achieve profit margins above 30%, making high-profit construction businesses rare. This distribution suggests that while firms aspire to higher profitability thresholds, many struggle to exceed the 20% mark due to various operational and market constraints.

Several factors contribute to this margin compression. Rising material costs, labor shortages, and inefficiencies in project execution are likely key drivers behind the difficulty in achieving higher margins. These market pressures create an environment where firms must contend with external challenges that limit their ability to maintain profitability at desired levels.

To address these issues and improve alignment between targeted and actual margins, construction companies may need to adopt more robust strategies focused on cost control and operational efficiency. Process optimization, lean construction practices, and the integration of advanced technologies such as automation and project management software can help mitigate inefficiencies and reduce costs. By implementing these measures, firms can potentially enhance their ability to achieve higher profit margins while navigating the complexities of the construction industry.

In conclusion, this analysis highlights a persistent challenge for construction companies: bridging the gap between aspirational profit targets and actual financial performance. Success in this area will require strategic investments in efficiency improvements and proactive management of market pressures to ensure sustainable profitability over time.



Key Takeaways for Profitability

1. Profit Margin Compression – The data highlights a challenge in reaching targeted profitability, with firms frequently falling into lower-than-expected margins.
2. Market Pressures on Margins – Material costs, labor shortages, and project inefficiencies likely contribute to the difficulty in achieving higher margins.
3. Need for Cost Control & Efficiency Improvements – Strategies such as process optimization, lean construction methods, and technology adoption may help firms better align actual margins with their targets.

1. Profit Margin Discrepancy: Why Are Firms Missing Their Targets?

The Actual vs. Targeted Margin graph highlights a significant challenge:

- Firms aim for higher profitability (20-29.9%), but few achieve it.
- The largest share of construction companies land in the 10-19.9% actual margin range, which suggests most businesses operate within moderate profitability but struggle to break into higher-margin categories.
- A notable portion of firms fall into the 0-9.9% actual margin range, well below their target margin.

Key Factors Contributing to Lower Profitability

1. Cost Overruns and Budget Creep

- Unexpected expenses, such as material price fluctuations and labor cost increases, erode profit margins.
- Inefficiencies in estimating project costs and managing budgets contribute to firms failing to meet their profit targets.

2. Labor Shortages and Productivity Loss

- High wages, overtime pay, and skilled labor shortages drive up operational costs.
- Low workforce availability often leads to project delays, which increase overhead costs and reduce profitability.

3. Project Delays and Change Orders

- Construction projects frequently experience delays due to permitting, weather conditions, or subcontractor issues.
- Unplanned change orders increase costs but are not always fully recoverable through contract adjustments.

4. Competitive Bidding Pressures

- Many firms face pressure to bid low to win contracts, reducing their margins from the outset.
- The low emphasis on "Low Price" as a business strategy (from the Business Strategy section) suggests that firms recognize this risk but still engage in price-based competition to secure work.

5. Supply Chain Volatility

- Material shortages and logistics issues continue to impact construction firms, leading to higher costs and longer lead times.
- Price spikes in key materials such as lumber, steel, and concrete make it difficult for firms to maintain target margins.

2. Profitability Tiers: Why Do Few Firms Achieve Higher Margins?

The Actual Margin graph shows that very few firms achieve margins above 30%.

- This suggests that while some high-margin firms exist, they are the exception rather than the rule.
- These firms likely differentiate themselves through high-value services, strong cost controls, and process efficiency.
- A deeper look into what enables high-margin firms to succeed could provide a roadmap for others looking to improve profitability.

What High-Margin Firms Likely Do Differently

1. Specialization in Niche Markets

- Companies in specialized sectors (e.g., luxury residential, industrial, or infrastructure projects) can command higher prices.
- Firms that focus on complex, high-skill projects often achieve better profitability than those competing in the general contracting market.

2. Operational Efficiency & Lean Practices

- Firms that embrace lean construction principles reduce waste and improve profitability.
- Prefabrication, automation, and digital project management help control costs and reduce inefficiencies.

3. Technology Integration

- High-margin firms tend to leverage BIM (Building Information Modeling), automation, and data-driven project tracking.
- Digital tools reduce rework, enhance planning accuracy, and improve overall cost control.

4. Stronger Contract Management

- Firms that achieve higher profitability often negotiate better contracts, ensuring:
 - Clear payment terms to maintain cash flow.
 - Risk-sharing agreements to minimize financial exposure from material cost spikes or project delays.

3. Strategies to Close the Profitability Gap

A. Cost Control & Budgeting Improvements

- Implement real-time cost tracking software to prevent budget overruns.
- Improve estimating practices to better align with actual expenses.
- Strengthen supply chain relationships to lock in pricing and reduce volatility risks.

B. Workforce Efficiency & Productivity Enhancement

- Invest in apprenticeship programs to develop a skilled workforce and reduce reliance on expensive subcontractors.
- Use technology (wearable devices, AI-driven scheduling tools) to improve on-site productivity.
- Shift toward modular and prefabricated construction to reduce labor-intensive site work.

C. Project Management & Risk Reduction

- Use data analytics to predict and mitigate risks before they impact profitability.
- Structure contracts to include cost escalation clauses, protecting firms from sudden material price hikes.
- Improve scheduling to minimize downtime and delays, ensuring efficient project completion.

D. Rethink Pricing Strategies

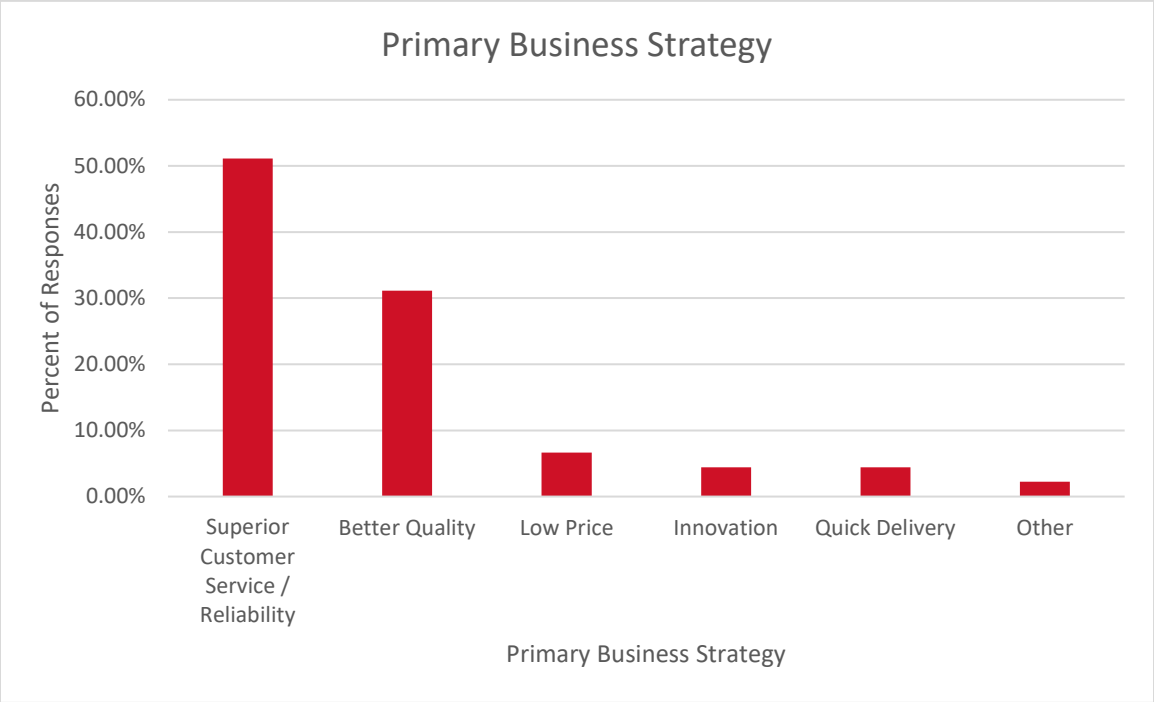
- Explore value-based pricing models, charging premiums for expertise and reliability.
- Identify niche markets where price sensitivity is lower, allowing for higher margins.
- Focus on differentiation (sustainability, advanced project tracking, unique materials) to justify premium pricing.

Final Thoughts on Profitability

- The data indicates that most firms fall short of their targeted margins, largely due to cost pressures, workforce challenges, and project inefficiencies.
- Firms that achieve higher profitability tend to be those that embrace niche markets, technology, lean practices, and strong financial controls.
- Adopting technology, enhancing workforce training, and improving cost management are key steps toward closing the profitability gap and achieving financial sustainability.

Business Strategy

In today's dynamic construction industry, a comprehensive business strategy is crucial for success. This strategy should encompass strategic planning with clear, measurable goals and a long-term vision, alongside initiatives to enhance operational efficiency through lean practices and technology adoption. Financial management is paramount, requiring detailed budgeting, regular forecasting, and effective cash flow management. Talent acquisition and development remain critical, with a focus on attracting top talent, providing ongoing training, and fostering a culture of accountability. Market positioning should involve identifying a specific niche, developing a strong online presence, and implementing targeted marketing strategies. Technology integration is increasingly important, with construction-specific software, emerging technologies like automation and data analytics, and cloud-based solutions becoming essential tools. Finally, robust risk management and compliance measures are necessary to navigate industry regulations, ensure workplace safety, and mitigate common risks. By addressing these key areas, construction companies can position themselves for sustainable growth and competitiveness in the evolving market landscape of 2025 and beyond.



- The most common business strategy in the construction industry, based on survey responses, is Superior Customer Service / Reliability, with over 50% of firms prioritizing this approach.
- Better Quality is the second most preferred strategy, with approximately 30% of firms focusing on this aspect.

- Low Price, Innovation, and Quick Delivery were significantly less prioritized, each receiving only a small percentage of responses.
- The "Other" category is the least chosen, suggesting that most businesses align with traditional competitive strategies rather than unconventional approaches.

Key Takeaways for Business Strategy

1. Why is "Superior Customer Service / Reliability" the Leading Strategy?

- Over 50% of firms have selected customer service and reliability as their primary strategy.
- The construction industry is heavily relationship-driven, where trust, consistency, and a strong reputation often led to repeat business and referrals.
- This focus suggests that firms:
 - Rely on word-of-mouth marketing and long-term client relationships.
 - Face challenges in differentiating based on price or innovation, making reliability a key competitive factor.
 - Are navigating a market where customer trust can outweigh cost as a decision-making factor.

Potential Risks of a Service-First Strategy

- Firms prioritizing customer service might underinvest in efficiency improvements, such as automation or lean construction methods.
- A strong reliance on reputation can create vulnerabilities if new competitors enter the market with both strong service and lower costs.
- Maintaining high service levels requires skilled labor, which may be difficult given workforce shortages.

2. The Secondary Focus: Quality Over Cost-Leadership

- Better Quality ranks as the second most popular strategy (~30% of firms).
- This suggests that firms are competing by offering superior craftsmanship, durable materials, and precision work.
- However, quality-focused strategies can come with higher costs—including:
 - More expensive materials.
 - Skilled labor requirements.

- Stricter quality control processes.
- The low focus on low-cost competition suggests that many construction firms recognize the risks of cutting costs, such as lower profitability and reputational damage.

Opportunities for Quality-Focused Firms

- Leverage technology (BIM, automation, prefabrication) to enhance quality without increasing costs.
- Improve operational efficiency to maintain high quality while controlling overhead expenses.
- Differentiate through certifications and compliance (LEED, safety ratings, sustainable practices) to capture premium contracts.

3. Why Are Innovation and Speed Not Prioritized?

- Only a small percentage of firms list innovation or quick delivery as their top strategy.
- Possible reasons for this trend:
 - High upfront costs associated with digital adoption, automation, and process innovations.
 - Risk aversion—many firms operate on thin margins and hesitate to invest in unproven methods.
 - Workforce adaptability issues—many employees may not be trained to work with advanced technologies.

What This Means for the Industry

- There is significant room for disruption by firms that adopt agile business models, digital construction tools, and prefabrication methods.
- Firms that invest in process automation and faster project completion could gain a competitive advantage in an industry slow to change.

Strategic Recommendations for Construction Firms

1. Balance Customer Service with Operational Efficiency
 - Firms should strengthen their client relationships while also improving internal processes to remain competitive.

- CRM (Customer Relationship Management) tools and streamlined communication can enhance customer experience without increasing costs.
2. Integrate Quality and Innovation
 - Companies should find ways to maintain high quality while using innovative materials and methods (e.g., prefabrication, AI-based project management).
 - Investing in digital project tracking tools could help ensure quality while improving efficiency.
 3. Use Speed as a Differentiator
 - The lack of focus on quick delivery presents an opportunity for firms to gain market share by offering faster project turnaround times.
 - Continuous Improvement techniques and modular building practices can help firms stand out in a slow-moving industry.

Final Thoughts on Business Strategy

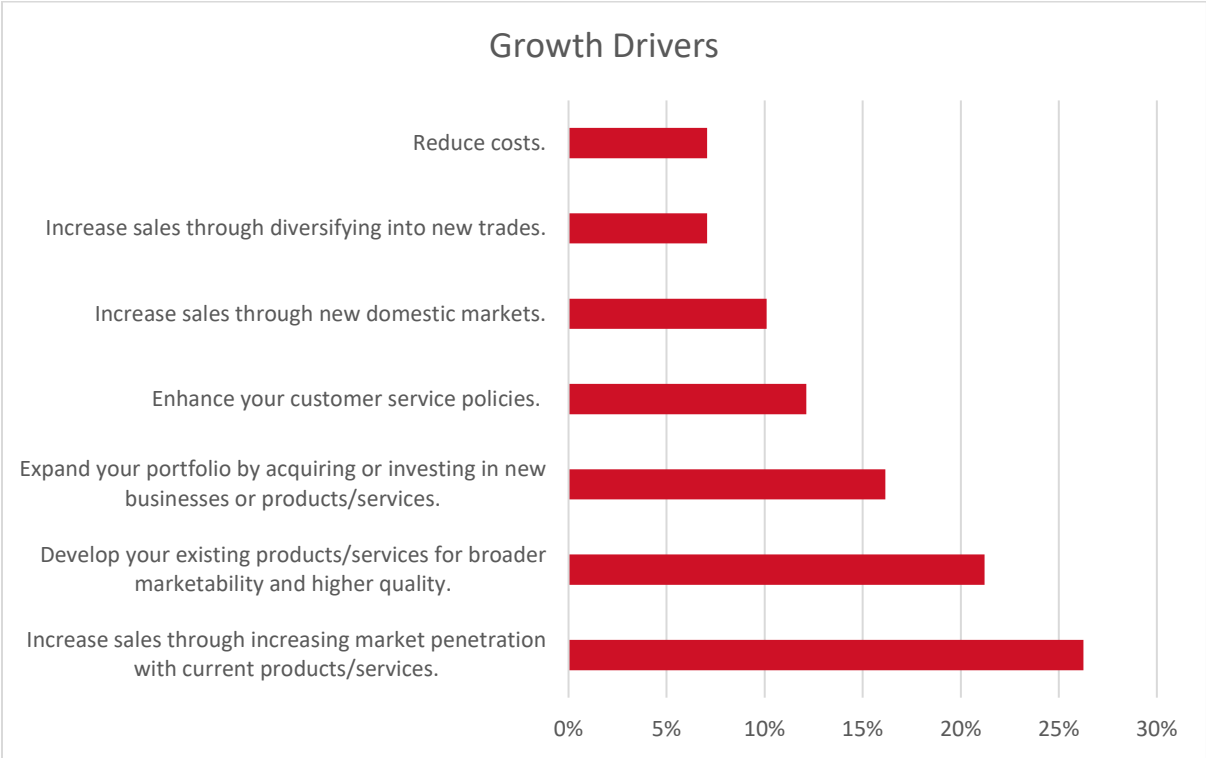
- The survey data reveals that construction firms lean toward traditional competitive strategies (customer service and quality) rather than cost-leadership or innovation.
- However, firms that integrate process efficiency, digital tools, and workforce development into their existing strategies will be better positioned for long-term growth.
- Future industry leaders will likely be those who balance superior customer service with technological advancements and operational efficiency.

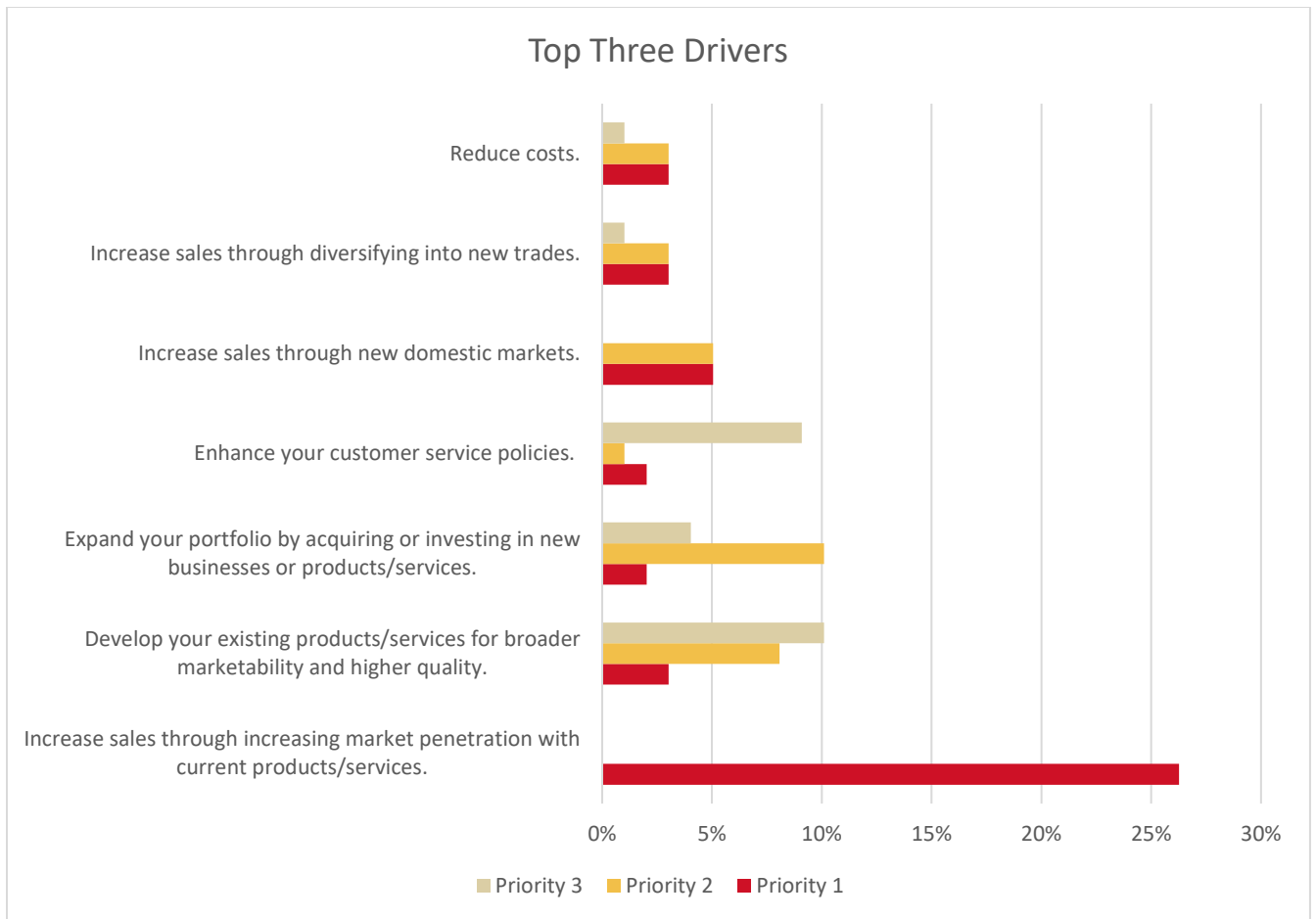
Growth Strategies

The construction industry's growth strategies in 2025 are primarily focused on market penetration, with firms prioritizing increased sales within their existing markets. This approach suggests that companies see untapped potential in their current sectors and are concentrating on strengthening client relationships, outperforming competitors, and expanding marketing efforts. As a secondary focus, firms are developing existing products and services to appeal to a broader client base, incorporating sustainability initiatives, advanced project management capabilities, and customization options.

Portfolio expansion through acquisitions and investments in new businesses or capabilities is gaining traction, allowing companies to quickly enter new markets or gain access to new technologies. However, this strategy requires careful due diligence and integration planning. Diversification into new trades or domestic markets is less prioritized, indicating a cautious approach to unfamiliar territories. Interestingly, cost reduction is the least emphasized strategy, with firms focusing more on top-line revenue growth rather than margin improvement through cost-cutting.

This strategic landscape highlights the industry's focus on organic growth within established competencies while cautiously exploring opportunities for expansion and innovation. To succeed, construction companies must balance their market penetration efforts with investments in service development, strategic acquisitions, and operational efficiency to ensure long-term resilience and competitiveness in an evolving market.





1. Dominant Growth Strategy: Market Penetration

- "Increase sales through increasing market penetration with current offerings" is the most prioritized strategy (far exceeding other growth drivers).
- This suggests that most firms are focusing on expanding their presence within their existing markets rather than diversifying into new trades or markets.
- The emphasis on market penetration indicates firms may see untapped opportunities within their current sectors, possibly through:
 - Strengthening relationships with existing clients.
 - Outperforming competitors on service, pricing, or project execution.
 - Expanding marketing and sales efforts to capture more business within their current segment.

Implications of a Market Penetration Focus

- Firms that double down on existing offerings must ensure they maintain competitive pricing, strong customer relationships, and operational efficiency to maximize sales.
- This strategy could limit long-term resilience if market conditions shift, suggesting firms may also need to explore complementary growth avenues (e.g., new services, innovation, or geographical expansion).

2. Product and Service Development as a Secondary Focus

- The next most significant driver is "Developing existing products/services for broader marketability."
- This suggests that firms recognize the importance of enhancing their current service offerings to appeal to a broader range of clients.
- Examples of strategies in this area may include:
 - Sustainability initiatives—offering eco-friendly building materials or energy-efficient construction.
 - Advanced project management capabilities—leveraging BIM (Building Information Modeling) and digital tools to improve efficiency.
 - Customization—expanding into specialized construction, such as modular buildings or high-end residential projects.

Challenges in Expanding Services

- Workforce training—new services require skilled labor and retraining existing employees, which can be costly and time-consuming.
- Capital investment—developing new services may require upfront investments in technology, equipment, or certifications.
- Market validation—firms must ensure that the expanded service offerings have strong demand before committing resources.

3. Portfolio Expansion and Acquisitions

- "Expanding portfolio by acquiring or investing in new businesses or capabilities" was another notable growth driver.

- This suggests that some firms are exploring mergers, acquisitions, or partnerships to drive growth rather than relying solely on organic expansion.
- This strategy can be particularly useful in:
 - Tapping into new geographic markets.
 - Gaining access to new technologies, materials, or processes.
 - Expanding service offerings quickly without internal R&D costs.

Considerations for Acquisition-Based Growth

- Acquisitions can provide rapid market entry but carry financial and integration risks.
- A strong due diligence process is critical to avoid acquiring businesses with hidden financial or operational issues.
- Firms pursuing acquisitions must ensure they have the capital and management structure needed to successfully integrate new business units.

4. New Market Expansion & Diversification

- Growth strategies such as diversifying into new trades or entering new domestic markets rank lower in priority compared to market penetration.
- This suggests that firms are cautious about expanding into unfamiliar territories and prefer growing within their current core competencies.
- Some firms, however, are prioritizing:
 - Regional expansion—moving into new cities or states.
 - Diversification into adjacent sectors—for example, a residential contractor expanding into light commercial work.

Challenges of Market Expansion

- Regulatory differences—new geographic regions may have different codes, labor laws, and permitting processes.
- Brand awareness & client trust—new markets require building credibility from scratch.
- Logistical complexities—expanding operations over a wider area can increase transportation and management costs.

5. Cost Reduction as a Growth Strategy

- Reducing costs was the least emphasized strategy in the dataset.
- This suggests that firms are focused more on top-line revenue growth rather than cutting costs to improve margins.
- However, cost control remains a critical factor in achieving long-term profitability, even if it's not a primary driver of expansion.

Efficiency-Focused Growth Opportunities

- Firms looking to grow without increasing costs can focus on:
 - Automating administrative and project management tasks.
 - Streamlining procurement and vendor negotiations to control material costs.
 - Adopting lean construction principles to reduce waste and inefficiencies.

Strategic Takeaways for Growth

1. Most firms prioritize expanding market share within their current business segment.
 - This suggests a focus on capturing more clients, strengthening customer relationships, and outperforming competitors in existing markets.
 - While this is a low-risk strategy, it limits long-term resilience if market conditions shift.
2. Enhancing current service offerings is a key secondary growth strategy.
 - Companies are looking to expand their expertise and differentiate their services to stay competitive.
 - This may require training, capital investment, and technology adoption.
3. Acquisitions and investments in new capabilities are gaining traction.
 - Some firms see M&A (mergers & acquisitions) as a viable path to expansion.
 - This strategy can provide rapid growth but requires strong financial management.
4. Few firms prioritize cost-cutting as a primary growth driver.
 - While cost efficiency is essential, firms appear more focused on top-line revenue growth rather than expense reduction.

Recommendations for Growth-Focused Firms

Leverage Market Penetration with Data-Driven Sales & Marketing

- Firms should use customer data, CRM tools, and digital marketing to identify and capture untapped demand in existing markets.
- Investing in brand reputation and strategic client outreach can improve retention and referrals.

Invest in Workforce Development to Support Service Expansion

- Growth will require skilled workers, so firms should prioritize training, apprenticeships, and automation to reduce reliance on scarce labor.

Explore Scalable Service Enhancements

- Companies should expand service offerings without overextending resources, focusing on technological integration and specialization in high-demand areas.

Diversify Growth Channels

- While market penetration is dominant, firms should consider gradual entry into new markets or trades to avoid overreliance on a single revenue stream.

Final Thoughts on Growth Strategies

- The construction industry is largely focused on strengthening existing market positions rather than exploring entirely new avenues.
- Companies that strategically integrate service expansion, technology adoption, and market diversification may gain a competitive edge.
- Long-term success will likely belong to firms that balance customer retention with operational innovation and market adaptability.

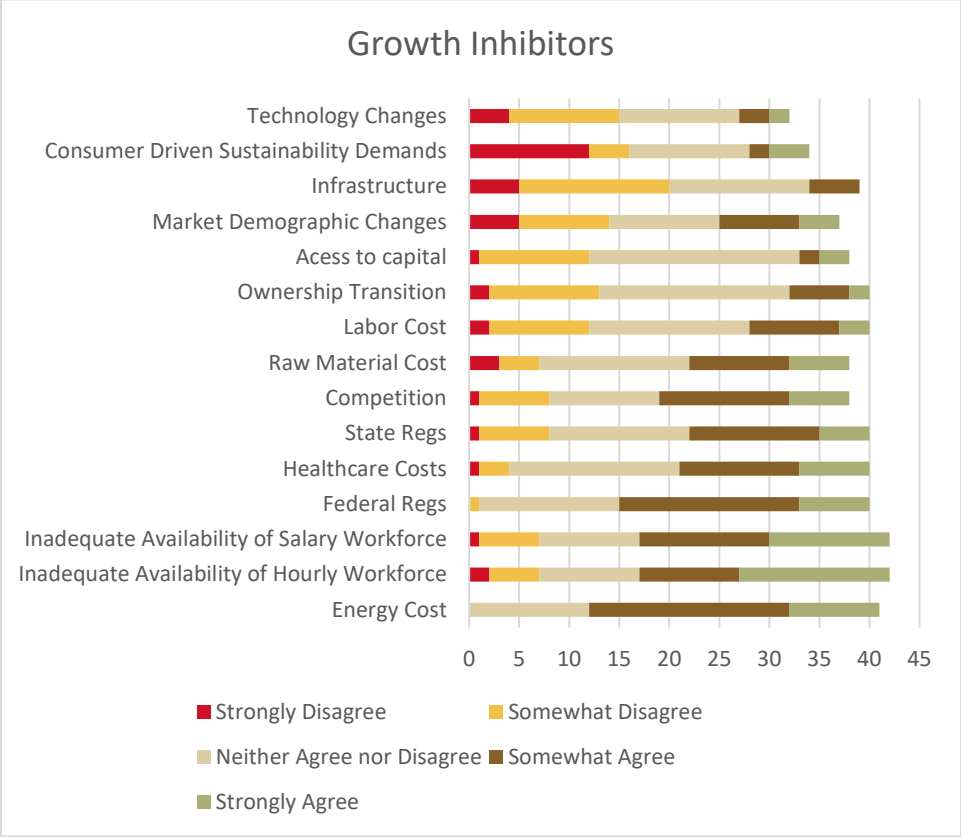
Growth Inhibitors

Several factors could inhibit growth in the construction industry in 2025. Labor shortages, driven by an aging workforce and difficulty attracting younger talent, continue to limit companies' capacity to expand and take on new projects, driving up labor costs and impacting profitability. High interest rates, although potentially stabilizing, are currently increasing borrowing costs for construction projects, deterring some developments. Market saturation also poses a challenge, as numerous firms compete for the same projects, making it difficult for companies to differentiate themselves and secure new business. The industry's slow adoption

of new technologies, such as Building Information Modeling and 3D printing, hinders efficiency gains and limits potential competitive advantages. Additionally, regional economic disparities, with slowdowns in certain areas, can further inhibit growth for companies operating in those regions. Material and supply chain issues, while not as prominent in recent discussions, likely remain a challenge due to ongoing global disruptions and fluctuating material costs. Regulatory constraints, particularly around sustainability and emissions, require adaptation and investment, posing challenges for companies struggling to meet new standards. Finally, economic uncertainty, especially in sectors like commercial and office space construction, limits growth opportunities. To overcome these inhibitors, construction companies must focus on innovative solutions, including workforce development, technological advancements, and strategic adaptations to align with changing market demands and regulatory requirements.

The Growth Inhibitors graph highlights key challenges that construction firms face when trying to expand. Each inhibitor is ranked based on respondents' agreement levels, ranging from "Strongly Disagree" to "Strongly Agree."

The most significant inhibitors, as indicated by high "Strongly Agree" and "Somewhat Agree" responses, provide a clear picture of what is holding back industry growth.



1. Workforce Availability: The Most Critical Growth Barrier

- "Inadequate Availability of Hourly Workforce" and "Inadequate Availability of Salary Workforce" rank among the most strongly agreed-upon inhibitors.
- This aligns with broader construction industry concerns regarding skilled labor shortages and the difficulty in attracting and retaining workers.
- The lack of both hourly (tradespeople) and salaried (management, engineering, project oversight) employees is a key constraint on expansion efforts.

Key Issues Contributing to Workforce Challenges

1. Aging Workforce & Retirement Gaps
 - Many skilled workers are retiring, with fewer young professionals entering trades.
2. Lack of Training & Apprenticeship Programs
 - Firms struggle to find qualified workers due to a gap in industry-specific education and apprenticeships.
3. Competitive Labor Markets
 - Other industries (e.g., manufacturing, tech, logistics) are attracting workers with higher wages or better working conditions.

Strategies to Overcome Workforce Shortages

Increase Workforce Development Efforts – Investing in apprenticeship programs, partnerships with trade schools, and internal training can help close the labor gap.

Adopt Automation & Prefabrication – Leaning on CNC machines, modular construction, and digital workflows can reduce reliance on manual labor.

Improve Employee Retention – Offering better career progression, wages, and job site conditions can help keep workers engaged.

2. Rising Costs: A Major Growth Constraint

- "Labor Cost" and "Raw Material Cost" are both highly ranked growth inhibitors.
- "Energy Cost" is also a notable concern, as construction projects often require heavy fuel and electricity consumption.

Key Cost Challenges

1. Unpredictable Material Pricing

- Supply chain disruptions and inflation have led to higher costs for steel, lumber, concrete, and other core materials.
2. Escalating Wages & Benefits
 - Due to labor shortages, wages for skilled construction workers are increasing, further squeezing margins.
 3. Energy & Fuel Price Volatility
 - Rising fuel costs directly impact transportation, equipment operation, and overall site expenses.

Strategies to Manage Cost Pressures

Long-Term Supplier Contracts – Locking in rates with reliable vendors can reduce exposure to price swings.

Material Substitutes & Sustainable Practices – Exploring alternative materials or energy-efficient construction techniques can reduce overall costs.

Energy Efficiency in Operations – Investing in fuel-efficient machinery, solar-powered sites, and energy-reducing technologies can improve cost management.

3. Regulatory & Compliance Barriers

- "Federal Regulations" and "State Regulations" both rank high as growth inhibitors.
- "Healthcare Costs" is also a concern, likely due to rising employer-provided healthcare expenses.

Key Regulatory Challenges

1. Complex Permitting & Compliance
 - Construction firms often deal with lengthy approval processes, building codes, and environmental regulations, which slow down projects and increase costs.
2. OSHA & Workplace Safety Compliance
 - Workplace safety rules, while necessary, require additional training, insurance, and protective measures, adding to overhead expenses.
3. Government-Driven Sustainability & Energy Regulations
 - Green building initiatives and emissions reductions (such as net-zero requirements) may require new certifications, materials, and construction methods.

Strategies to Navigate Regulatory Constraints

1. Proactive Compliance Planning – Assigning a dedicated compliance team can help firms stay ahead of evolving regulations.
2. Leverage Green Certifications as a Competitive Edge – Rather than seeing sustainability rules as a burden, firms can market green compliance (LEED, Net-Zero) as a selling point.
3. Advocacy & Industry Engagement – Firms that engage with local policymakers and industry groups may have more influence over regulatory developments.

4. Financial & Market Constraints

- "Access to Capital" is a significant barrier, indicating that firms struggle to secure financing for expansion.
- "Ownership Transition" also emerges as a concern, likely reflecting challenges in succession planning and leadership continuity.

Key Financial Challenges

1. High Interest Rates & Lending Restrictions
 - Rising interest rates make it more expensive to borrow money for new equipment, expansion, and hiring.
2. Cash Flow Issues from Payment Delays
 - Many construction firms operate with delayed payments from clients, leading to cash flow constraints.
3. Succession & Business Continuity Risks
 - Many firms, particularly family-owned businesses, struggle with leadership transitions, impacting long-term stability.

Strategies to Overcome Financial Barriers

1. Diversify Revenue Streams – Expanding into higher-margin services or maintenance contracts can provide steadier cash flow.
2. Improve Payment Terms & Contract Structuring – Negotiating faster invoice payments and progress-based billing can ease cash flow pressures.
3. Explore Alternative Financing – Looking into private equity, government grants, or joint ventures can help firms fund growth.

5. Market Uncertainty & Competitive Pressures

- "Competition" and "Market Demographic Changes" rank high as barriers.

- "Technology Changes" is also listed, suggesting that digital transformation is both an opportunity and a challenge.

Key Market Challenges

1. Increasing Competition in Established Sectors
 - The construction industry has many small-to-mid-sized firms competing for the same contracts, leading to pricing pressures.
2. Evolving Customer Expectations
 - Clients increasingly demand faster delivery, sustainability, and digital project tracking, pushing firms to adopt new tools and techniques.
3. Adapting to Technology & Process Changes
 - The slow pace of tech adoption in construction means firms that fail to modernize risk losing market share.

Strategies to Stay Competitive in a Changing Market

1. Invest in Differentiation & Niche Markets – Focusing on specialized services (e.g., green building, modular construction, smart buildings) can help firms stand out.
2. Adopt Digital Project Management Tools – Using BIM, AI scheduling, and real-time tracking can improve efficiency and client satisfaction.
3. Strengthen Brand & Customer Relationships – Firms with a strong reputation, clear communication, and proven reliability will have a competitive edge.

Final Thoughts on Growth Inhibitors

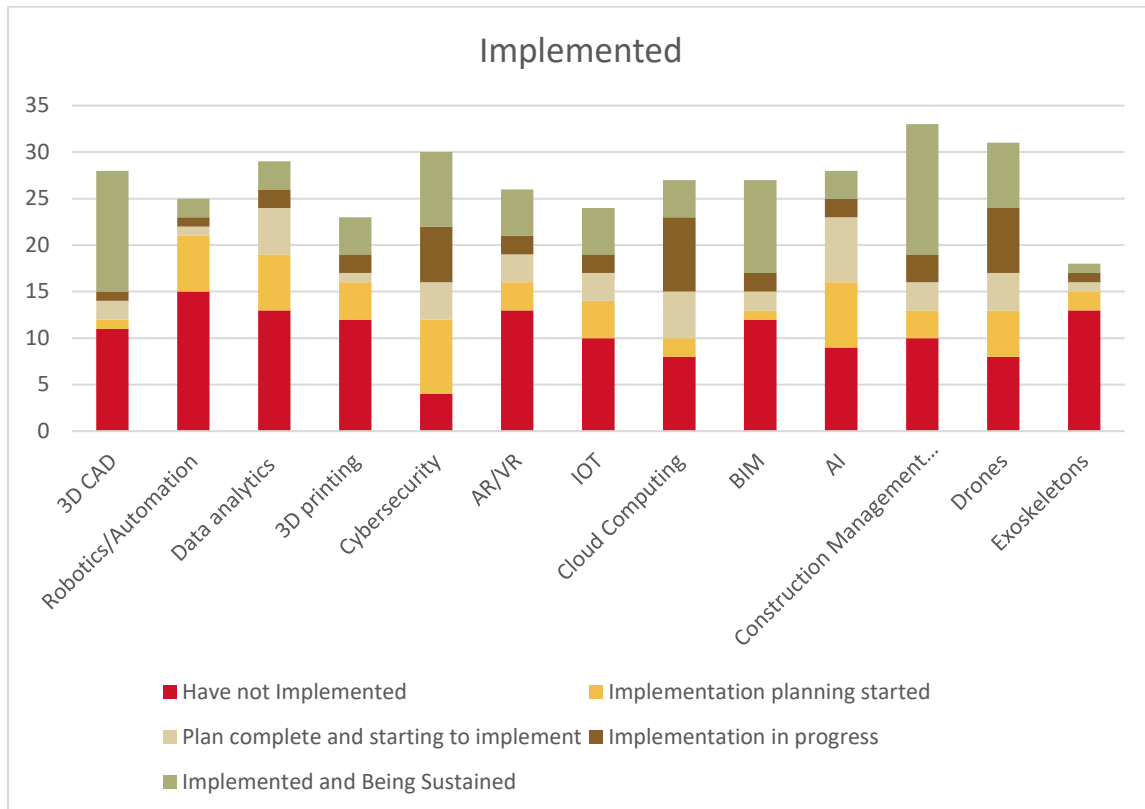
- Labor shortages, cost pressures, and regulatory constraints are the biggest hurdles to construction industry growth.
- Financial constraints and succession challenges could impact long-term stability, especially for smaller firms.
- Firms that prioritize workforce development, technology adoption, and financial resilience will be better positioned for future growth.

Technology Adoption in Construction

The construction industry is undergoing a significant transformation as it enters 2025, driven by rapid technological advancements and a growing emphasis on efficiency, sustainability, and digital integration. Building Information Modeling (BIM) continues to be a cornerstone of this evolution, providing a comprehensive digital representation of projects throughout their lifecycle. Emerging technologies such as augmented reality (AR), virtual reality (VR), and drones are revolutionizing on-site operations and project management. Artificial intelligence (AI) and data analytics are enhancing decision-making processes and predictive capabilities. Additionally, 3D printing and robotics are reshaping traditional construction methods, addressing labor shortages and improving productivity. As the industry embraces these innovations, it is moving towards a more connected, data-driven approach that promises to enhance collaboration, reduce errors, and optimize project delivery across all phases of construction.

1. Overview of Technology Implementation

Technology adoption in the construction industry varies significantly based on maturity, business value, and implementation challenges. While some technologies like 3D CAD, BIM, and cloud computing are fully integrated into workflows, others, such as artificial intelligence (AI), robotics, and exoskeletons, are still in early adoption phases.



2. Technology Readiness Levels (TRL) and Adoption Timelines

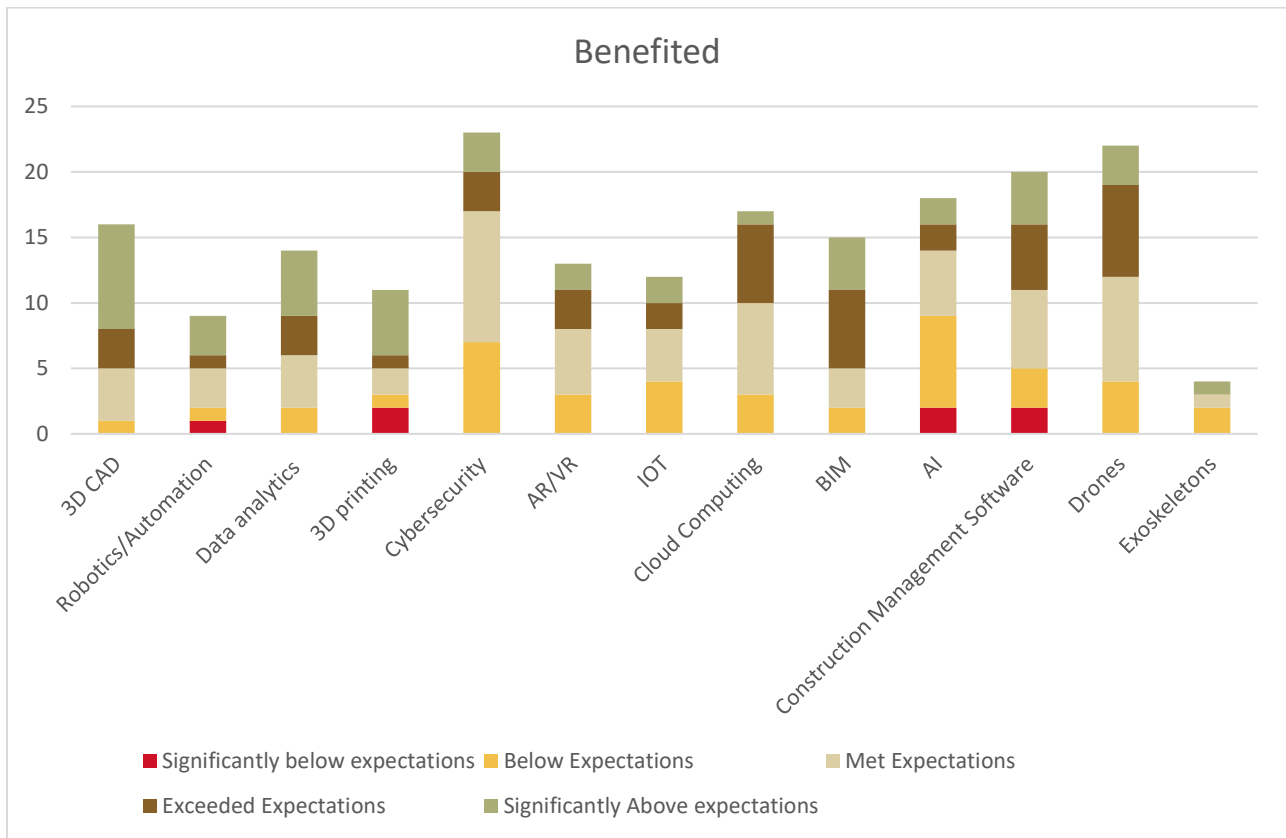
To assess the maturity of different construction technologies, we analyzed their Technology Readiness Levels (TRLs) and potential adoption timelines.

Technology	TRL Level	Explanation	Potential Adoption Timeline
3D CAD	TRL 9	Fully implemented and widely used in construction.	Immediate
Robotics/Automation	TRL 6-8	Limited adoption; mature in some sectors.	Near-term
Data Analytics	TRL 7-9	Proven in other industries, growing in construction.	Near-term
3D Printing	TRL 5-7	Emerging applications in niche areas.	Medium-term
Cybersecurity	TRL 8-9	Highly mature, essential for digital transformation.	Immediate
AR/VR	TRL 6-8	Used for training and design visualization.	Medium-term
Internet of Things (IoT)	TRL 6-8	Used for monitoring but still evolving.	Near-term
Cloud Computing	TRL 8-9	Widely implemented across industries.	Immediate
Building Information Modeling (BIM)	TRL 8-9	Widely adopted for design and collaboration.	Immediate
Artificial Intelligence (AI)	TRL 5-7	Emerging with pilot projects in construction.	Medium-term
Construction Management (CM) Software	TRL 7-9	Commonly used for project management.	Immediate
Drones	TRL 6-8	Growing adoption for site surveys and monitoring.	Near-term
Exoskeletons	TRL 3-5	Experimental, limited industry use.	Long-term

3. Benefits vs. Expectations of Technology Adoption

Despite implementation progress, companies report mixed experiences with technology benefits. Some technologies, such as AR/VR, drones, and BIM, have exceeded expectations, while others, like robotics and data analytics, have not consistently delivered anticipated results.

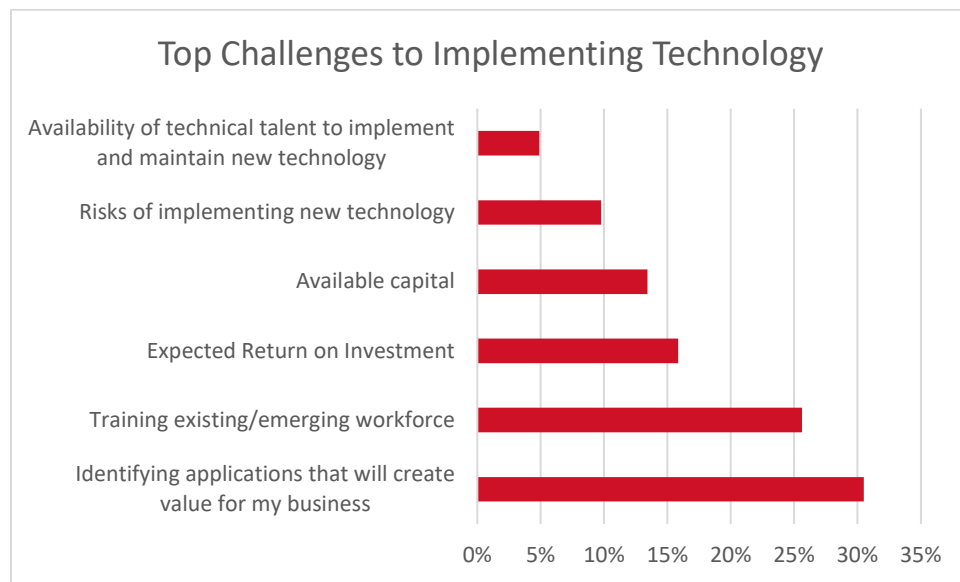
- Exceeded Expectations: AR/VR, drones, BIM
- Met Expectations: Cloud computing, cybersecurity
- Below Expectations: Robotics, data analytics



4. Challenges in Implementing Technology

The survey identified key barriers to technology adoption:

- #1 Challenge: Identifying applications that create business value (30%+ respondents)
- Workforce Training Gap: Many firms struggle to upskill their workforce.
- ROI & Capital Constraints: Companies hesitate to invest without clear financial returns.
- Risk & Talent Shortage: Some firms cite technology risks and lack of technical expertise as obstacles.



5. Key Takeaways & Recommendations

- Mature technologies (BIM, Cloud Computing, 3D CAD) are well-adopted, but emerging technologies need clearer ROI justification to scale further.
- Workforce training and skills development must be prioritized to close the technology adoption gap.
- AR/VR, AI, and drones show strong potential, but businesses need more structured implementation strategies.
- Capital and risk concerns must be addressed to accelerate adoption of robotics, IoT, and automation solutions.

Survey Methodology

Survey Design

The purpose of this survey was to help CIRAS gather information on the construction industry to identify critical needs and areas for support. The survey targeted construction companies within the State of Iowa, focusing on workforce challenges, technology adoption, business strategies, and other key industry concerns.

Data Collection

- The survey was distributed via email and online to reach industry participants within the Specialty Trades Contractors, Building Construction Contractors and Heavy & Civil Engineering Contractors
- It remained open for six weeks, running from August 16th to September 20th.
- A total of 92 responses were collected, providing insights into industry trends and challenges.

Data Analysis

- Survey responses were analyzed using quantitative and qualitative methods to identify key themes and trends.
- Responses were categorized based on ranking concerns, implementation progress, and technology adoption levels.
- Findings were cross-referenced with secondary industry data for validation.^{6,7}

Survey Ethics & Confidentiality

- The survey was conducted anonymously, ensuring respondent privacy.
- Individual responses were not shared, and results were aggregated to provide industry-level insights.
- CIRAS used this data solely for industry analysis and development of recommendations, without disclosing specific company information.

⁶ <https://www.asite.com/blogs/the-egan-report-23-years-on-part-2-intersection-between-manufacturing-and-construction>

⁷ *Construction Industry Needs Assessment Survey 2024*