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Empowering Construction with Data

Pioneering the Future of Building
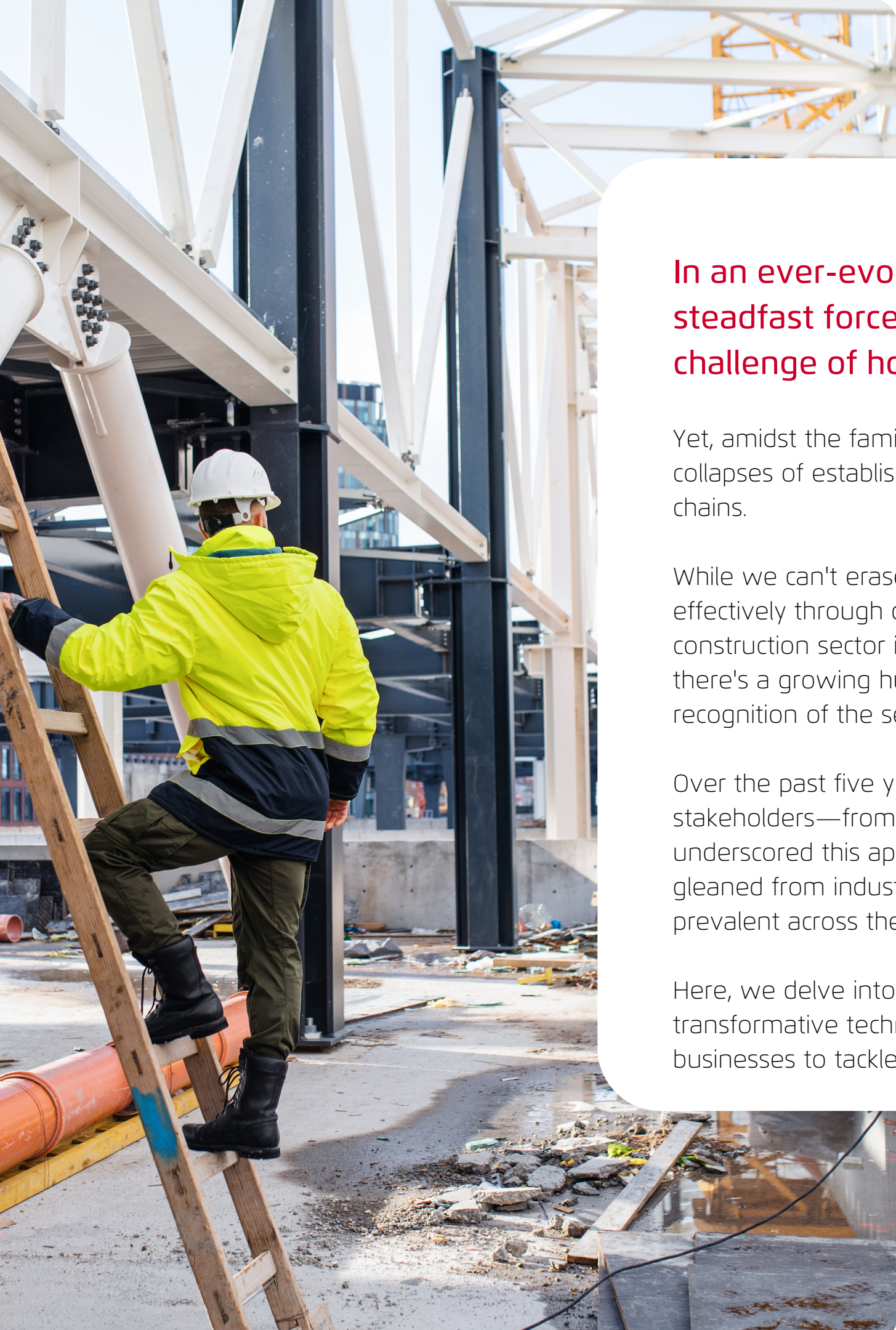
In an ever-evolving landscape, the construction industry remains a steadfast force, shaping our cities and addressing the perpetual challenge of housing shortages.

Yet, amidst the familiar rhythms, uncertainties loom large—from sudden collapses of established players to political upheavals disrupting supply chains.

While we can't erase these uncertainties, we can navigate them more effectively through data-driven strategies. Despite perceptions, the construction sector is not immune to technological transformation. In fact, there's a growing hunger for innovative risk management solutions and a recognition of the sector's readiness for technical evolution.

Over the past five years, our collaboration with diverse industry stakeholders—from housebuilders to infrastructure specialists—has underscored this appetite for change. Through discussions and insights gleaned from industry insiders, we've identified four key challenges prevalent across the sector.

Here, we delve into these challenges, offering our perspective on how transformative technology and data-driven decision-making can empower businesses to tackle the road ahead with confidence.

1 Housing Shortage: Despite government targets, the UK faces a persistent shortfall in residential properties, driving the need for innovative solutions to accelerate construction.

2 Operational Risks: From project delays to supply chain disruptions, construction firms grapple with a myriad of operational risks, highlighting the urgency for robust risk management strategies.

3 Recruitment Challenges: The industry faces a talent shortage exacerbated by demographic shifts and competition from emerging sectors, necessitating proactive measures to attract and retain skilled workforce.

4 Political Uncertainty: Previous geopolitical factors introduced volatility, impacting investment decisions and project timelines, emphasising the importance of agile decision-making frameworks.

As we navigated these challenges, harnessing the power of data emerged as a beacon of hope, guiding us towards a future where informed decisions drove sustainable growth and resilience in the construction industry.

Problem 1: The Workforce

The simple fact is that we need people on the ground. In Great Britain, the construction industry saw significant growth in 2022, with the number of construction-related employees (excluding self-employment) increasing by 3.3% compared to 2021, totaling 1.4 million workers. The private housing sector emerged as the biggest contributor to this increase. Moreover, in 2021, there were 353,365 Value Added Tax (VAT) and Pay As You Earn (PAYE) registered firms operating in the construction industry in Great Britain, marking a 3.2% growth compared to 2020.

However, despite this growth, the industry still faces substantial challenges. Let's put this into perspective: if just 5 percent of employees retire or otherwise leave a company each year, across the industry, it equates to a need for over 70,000 new starters annually to cover natural workforce depletion.

This depletion rate, in itself, wouldn't pose a problem if it remained steady, and if companies could rely on a consistent influx of new talent to fill staffing gaps as they arise. However, both anecdotal evidence and extensive sector research indicate that something is amiss on the staffing front. Recent surveys suggest that more than half of companies are impacted by growing skills shortages, with 1 in 20 firms reporting that their workforce lacks the necessary skills for the present or future.

"The construction industry saw a 25.7% annual increase in the number of recorded company insolvencies in 2021."

– Office for National Statistics

Multiple factors contribute to this shortfall, and unfortunately, the situation appears poised to worsen.

1. Increased Demand: Despite the growth in the industry, certain sub-sectors may exhibit sluggishness, while others experience significant demand. For example, construction new work in Great Britain experienced strong growth (15.3%) in 2021, reaching £115,579 million, driven by private industrial, private housing, and private commercial projects. However, the infrastructure sector saw negative growth, with a notable decline in electricity and roads, partially offset by railways.
2. The Demographic Time Bomb: The seasoned employees and contractors who form the backbone of construction businesses won't be around indefinitely. According to the Labour Force Survey (2016 Q3) from the Office of National Statistics, the UK-born construction workforce is heavily skewed toward the 45-and-over age group. We're on the brink of a demographic bulge, with half a million workers set to retire from the industry in the next decade. Moreover, research indicates that the sector has failed to adequately develop younger workers to fill this impending gap.
3. The Brexit Effect: A recent poll of EU nationals working in construction revealed that one in three workers considered leaving the UK because of Brexit. Seven percent of construction workers in the country as a whole —and over a quarter of the capital's workforce—came from EU member states. Even with a relatively 'smooth' political negotiation, the industry could still have faced a mini-exodus, adding inevitable pressure on the staffing front.

There has been a 42% decline in the number of EU nationals working in the UK construction industry between 2017 and the end of 2020

– The Guardian

Despite the challenges, there are opportunities for growth and innovation in the construction industry. By addressing the workforce shortage through strategic initiatives and leveraging data-driven decision-making, businesses can navigate these challenges and thrive in an ever-evolving landscape.

" *According to Go Construct, more than one-third (37%) of new entrants into the UK construction industry from higher education are women, and 14% of construction industry professionals are female.* "

Meeting the Challenge: HR Transformation in Action

If critical staffing issues are to be averted, then certain things must change. Workplace culture and diversity are areas where steady progress is already underway. According to a report by Construction News, women now make up a higher proportion of the construction workforce than at any time since official records began, with the construction workforce being 15.8% women in 2023. This marks a significant shift in the industry's demographics.

However, despite this progress, there's still much to be done to achieve gender balance across all levels of the construction sector. Just 1% of skilled tradespeople in the construction industry are women, and only 16% of senior positions in construction companies are held by women. This indicates a significant disparity in representation within the industry's leadership ranks.

It's worth noting that the UK surpasses other countries like the US and Germany in terms of the percentage of female construction workers. Yet, the disparity in skilled trades and senior positions underscores the need for targeted initiatives to promote gender diversity and inclusion.

According to Go Construct, more than one-third (37%) of new entrants into the UK construction industry from higher education are women, showing a growing interest and potential talent pool among female graduates. Additionally, 14% of construction industry professionals are female, indicating a rising presence of women in professional roles within the sector.

To address the gender gap and promote diversity, progressive companies are implementing strategies to attract, retain, and advance women in construction. This includes targeted recruitment efforts, mentoring programs, and initiatives to create a more inclusive workplace culture.

By leveraging HR Analytics and data-driven insights, companies can identify areas for improvement and tailor strategies to foster a more diverse and equitable workforce. From recruitment to career development, HR Analytics provides valuable insights into optimising talent management practices and driving positive change in the construction industry.

Problem 2: The Squeezed Bottom Line

The 'lowest bid wins' approach has long been problematic. It fosters a culture of uncertainty, encouraging participants to take a gamble with estimations, and often sacrificing profits in the process. In the commercial building sector particularly, companies find themselves continuously squeezed by fluctuating costs and the relentless pressure to submit ever-more competitive tenders. Mace Cost Consultancy recently predicted that tender prices, the amount paid by the end client, are unlikely to see an increase in the near future.

Moreover, with the UK's departure from the EU in the past, businesses faced increased operating costs, especially concerning uncertainty surrounding access to labor and materials. Turner & Townsend's International Construction Market Survey indicated a potential increase in construction costs of 2 to 3.8% for the UK overall and 4.1% for London. This presents a challenging dilemma: increase your bid and risk losing the contract, or cut your profits—a choice no company relishes.

Adding to the complexity, recent forecasts paint a mixed picture. The Glenigan Construction Industry Forecast 2024-2025 predicts a robust growth of 8% in 2024 and another 7% in 2025, driven by an increase in bigger project starts amidst a strengthened UK economy with decreased inflation and overall growth back on track. However, the Building Cost Information Service (BCIS) forecasts a rise of just over 3% in construction costs and slightly over 2% in tender prices in the year to 3Q 2024.

While technology doesn't eliminate the perceived 'race to the bottom', it offers invaluable insights into complex build projects. Data-driven decision-making becomes paramount, preventing the submission of tenders or agreements that are simply not viable. Value-added collaboration and data integration streamline operations, ensuring teams have access to the most up-to-date information.

"To improve project data quality, organisations must tighten data entry practices, as inconsistent entries are the key issue."

The Power of Data Strategy in Construction

1 Enhanced Decision-Making: A robust data strategy empowers construction teams with quick access to critical information, enabling informed decisions that drive projects forward with minimal risk. Historical and real-time data fuel predictive models, preventing failures on future projects.

2 Cost Efficiency: Data analytics revolutionises the construction landscape, offering firms a competitive edge amidst tight deadlines, budget constraints, and regulatory complexities. With a growing need for advanced construction analytics, big data management becomes paramount, optimising project management and costs for widespread adoption.

3 Quality Control: Poor project data leads to suboptimal decisions and outcomes. Tightened data entry practices combat inconsistent data entry, ensuring accuracy and reliability. By prioritising data integrity, construction firms bolster quality control, enhancing project success.

Problem 3: Addressing Common Construction Delays with Technology

Delays are a persistent challenge in the construction industry, ranging from sub-contractor no-shows to weather-related disruptions. Identifying the specific types of delays prevalent in our industry is crucial to implementing effective mitigation strategies.

In a McKinsey & Co 2013 report titled "The Construction Productivity Imperative," the industry's struggle with completing large-scale capital projects on time, within budget, and to specifications is underscored. The report emphasises the potential of improved project management and technological innovation to enhance project success rates.

Furthermore, a January 2022 article from Construction News underscores the pervasive nature of project delays, particularly in the aftermath of pandemic disruptions. The article reveals that nearly 9 in 10 large construction projects are behind schedule, with almost a quarter experiencing delays exceeding one year. These delays, especially prevalent in projects exceeding £100m, highlight the urgent need for proactive measures to address scheduling challenges.

To tackle these delays effectively, technology emerges as a valuable ally. By leveraging innovative tools and solutions, construction firms can streamline project management processes, enhance communication and collaboration, and proactively identify and address potential delays. From real-time progress tracking to automated materials procurement, technology offers multifaceted benefits in mitigating common construction delays and improving project outcomes.

"Delays are an unavoidable reality in construction. While technology can't eliminate these factors, it can help mitigate their impact on your business"

- sitemate.com

Problem 4: Upholding Quality Standards

Ensuring quality is paramount in construction, as sub-par outcomes can significantly damage your reputation. The proposed establishment of a New Home Ombudsman in the UK, empowered to order payouts of up to £50,000 to new buyers, underscores the importance of maintaining quality standards to avoid potential sanctions.

Amidst the challenges of rising costs, talent shortages, delays, and the relentless pressure to enhance efficiency, maintaining quality benchmarks can feel like an uphill battle. However, it is essential to prioritise quality to ensure that the end product is safe, durable, and meets the expectations of the buyer.

Utilising data analysis as an early warning system can help identify potential deviations in the build process, enabling proactive measures to realign operations and prevent quality lapses. Moreover, leveraging data-driven insights facilitates continuous improvement, ensuring consistent, high-quality results across construction projects.

> " Quality is a crucial aspect of construction, and it is essential to prioritise quality to ensure that the end product is safe, durable, and meets the expectations of the buyer. According to a report by HomeViews, a platform that collects reviews from verified residents in thousands of new build homes across the UK, CALA Homes is the top-rated house builder for build quality in the UK 1 "

The future...

Brexit has undeniably reshaped the UK construction market, with significant implications for both materials and labor costs. According to a report by the UK Trade and Business Commission (UKTBC), the cost of construction materials and labor in the UK has surged more steeply than in the EU since the Brexit referendum. Between 2015 and 2022, construction materials, including cement, timber, and steel, saw a staggering 60% increase in costs in the UK, while labor costs rose by 30%. In comparison, the EU experienced a 35% rise in material costs, with countries like Denmark and the Netherlands witnessing only a 14% increase in labor expenses.

These findings underscore the challenges facing the construction industry post-Brexit. While the full extent of Brexit's impact remains uncertain, it's evident that the sector is navigating significant changes. Despite these challenges, the UK property market has exhibited remarkable resilience since the Brexit referendum in 2016.

Residential transactions surged by 14.4% between July 2016 and May 2022, accompanied by a 32% increase in UK house prices during the same period.

In light of these developments, it's crucial for companies to adopt more effective methods of data analysis to navigate the evolving landscape successfully. By leveraging data-driven insights, construction firms can adapt to market changes, optimise decision-making processes, and maintain competitiveness in a post-Brexit environment.
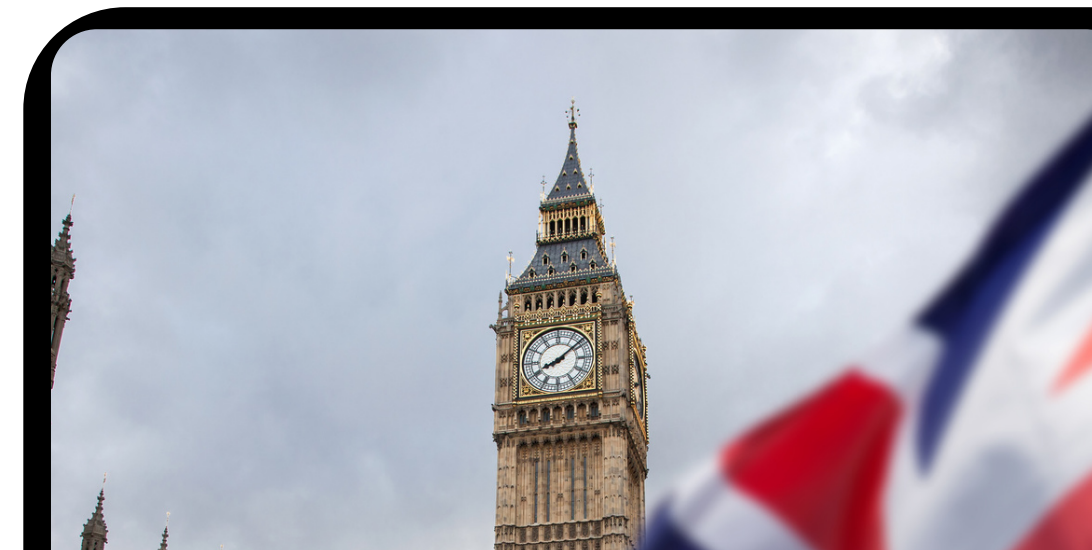
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Sempre Analytics is a leading provider of comprehensive data and analytics solutions, empowering organisations to make informed decisions and drive operational efficiencies. With expertise in Data Management, Business Planning, Business Intelligence, and Intelligent Automation, Sempre Analytics enables clients in industries such as Financial Services, Retail, Manufacturing, Housebuilding & Construction, Higher Education to unlock the full potential of their data. What sets Sempre Analytics apart is its unwavering commitment to customer success. Working with renowned technology providers, including Informatica, Anaplan, IBM, Microsoft and Automation Anywhere, to deliver innovative solutions, their dedicated team of consultants works closely with clients to develop tailored solutions that deliver real value.

Don't just manage data - master it. Contact our team today to embark on a journey of data-driven success!

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