

You can have Productivity and Safety

Building a high-performance culture can deliver both.



By Kevin Cunningham

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This column is the first of three that will provide information you can act on to *improve productivity while re-inventing our safety programs* in today's construction market.

There is a *common misperception* that productivity and safety are mutually exclusive: that if you improve one of them, you will worsen the other.

This three-part series will show that you can, indeed, have *both* high productivity and strong safety.

The three installments will cover:

- 1. Identifying the problem**, including relevant statistics about low productivity in the overall construction industries, compared to other business segments, in order to establish a baseline for corrective action in today's crane and construction market.
- 2. Recognizing the high-performance habits** needed to make long-term improvements in productivity and safety.
- 3. Executing fundamental steps** to measurably improve both productivity and safety culture in today's crane operations.

Identifying the Problem

Construction is a key industry in the U.S. economy, and has seen record revenue growth over the

past few years. However, construction and the associated crane industry have struggled to evolve their approaches to productivity as other segments of the economy have done, resulting in lower productivity per revenue generated.

While other sectors from retail to manufacturing have significantly transformed efficiency and boosted productivity, construction appears stuck in a time warp. For example, since 1945 productivity in U.S. manufacturing, retail and agriculture has improved by as much as 1,500%, yet construction productivity has barely increased at all.

This three-part series will illustrate data and facts showing poor

productivity growth in the construction industry, explore practical ways to improve the situation, and touch on the beginnings of a shift in parts of the construction sector toward a system of modernization in risk management culture that could boost productivity by five to 10 times in some sectors, according to a recent report by McKinsey Capital Projects & Infrastructure Practice.

Construction Productivity Matters for Everyone

The economic value created from improving productivity can be significant and can be distributed among stakeholders in the form of higher EBITDA margins for crane companies, higher wages for workers, and eventually lower costs for owners.

According to McKinsey, "Making a concerted effort to move away from primarily a *process-driven system* of construction to a *more holistic project-operating system* can improve the industries' poor current performance on cost, schedule, and predictability, thereby improving construction productivity by an estimated 50% to 60% over time."

However, today's project

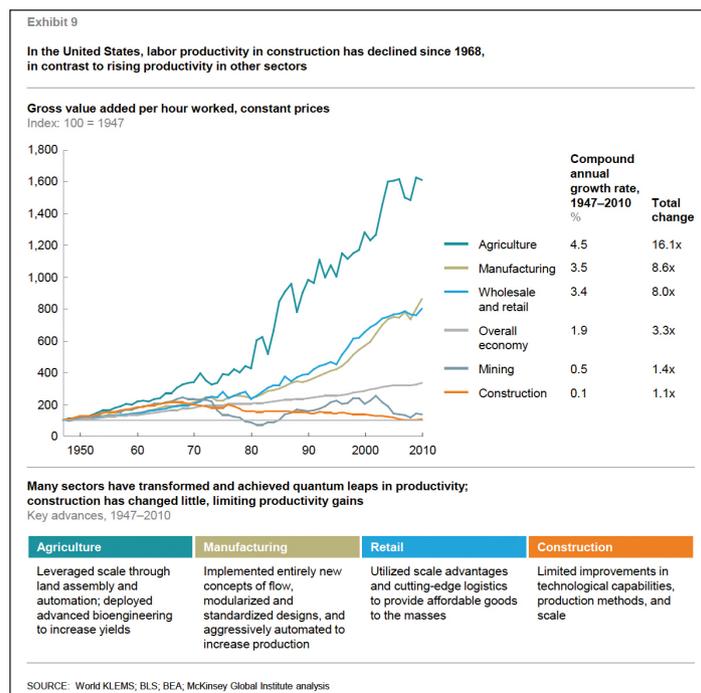


Exhibit 9 from the McKinsey Global Institute Analysis shows how much U.S. industries have improved productivity since 1950.

sites are growing ever more complex, and owners/operators are constantly challenged by a lack of qualified labor to keep pace with today's growth. In addition, our construction/crane industry faces extensive regulation and public-sector demands.

Those factors compound the dynamics that affect low productivity, as construction is among the world's most fragmented industries.

The growing demand for construction and the increasing density of existing development have combined to drive up the size and complexity of projects, both of which affect productivity.

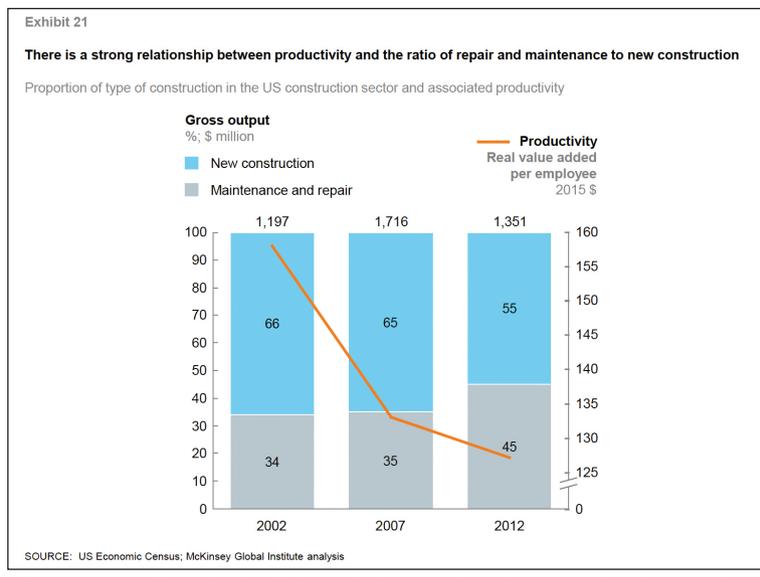
The **Construction Industry Institute (CII)** is a nonprofit consortium at the University of Texas at Austin. In contributing to the McKinsey Report, CII said, "Complexity rises as projects increase in size, and this drags down productivity. Project outcomes also suffer."

In addition to CII primary research, the institute maintains an extensive database to benchmark project performance via its *Performance Assessment System (PAS)*. The PAS contains project performance and productivity data from more than 2,000 projects worth more than \$280 billion in all regions, asset classes, and sizes, from less than \$5 million to more than \$500 million per project.

According to CII, projects included in the Institute's benchmarking database with "low" complexity average -4.2% cost slippage; projects with "medium" complexity average -0.2% slippage; and those with "high" complexity average 1.7% slippage.

Now the construction industry is struggling with a different type of complexity.

The U.S. undertook major investment in infrastructure decades ago. We now need to focus on repairing, maintaining, and upgrading those systems, primarily bridges, roads, etc.



New construction inherently enjoys higher productivity rates than maintenance and repair construction.

Relationship Between Productivity, Repair, and Maintenance

According to McKinsey's analysis, U.S. productivity data shows that as the proportion of repair and maintenance construction has increased, there has been a corresponding fall in productivity (Exhibit 21).

Repair and renovation take place in a constrained environment. Construction and crane companies on those kinds of jobs work on tight, often highly occupied sites where it is difficult to anticipate complications, and where it is hard to work at scale and with a high degree of standardization.

In addition, real estate/building projects in dense urban environments have constraints on working hours in order to comply with noise laws. Small lots do not allow projects to be staged effectively, and transporting materials and equipment (particularly cranes) presents further challenges to productivity and safety.

Integrated Planning, Performance Measurement Help Transform Productivity

The research data shows that low productivity definitely exists in construction. Clearly, transforming productivity in today's construction market will require a different approach.

McKinsey says that three key components are needed to improve productivity and safety on today's

construction projects:

1. Identifying Key Performance Indicators (KPIs).
2. Maintaining consistent coordination and alignment with all project stakeholders.
3. Tying together physical and economic progress on site in a consistent manner.

The KPIs should be defined for each discipline on a site. They need to cover **safety, schedule, cost, and quality**. They also should include look-ahead planning metrics.

The KPIs should be maintained consistently in a central project location where they can be monitored clearly.

Making results visible in a timely manner and in detail enables the "plan-do-check-act" process that is so vital to continuous improvement. The process sets the stage for a robust transformation to improve productivity and safety going forward.

Conclusion of Part One

Part one of our three-part series has covered identification of the core problem with some construction-productivity statistics and has touched on the economic value of improving productivity. It has also touched on improvement, along with recognizing the potential for continued challenges with forthcoming infrastructure project type growth.

Additionally, it discussed the beginning elements for starting a productivity-improvement transformation by establishing Key Performance Indicators as part of developing solutions.

Part two of this series will delve into establishing *high performance habits* that will make measurable long-term improvements in productivity and safety.

Part three will illustrate fundamental steps to establish a defined formula for creating a crane culture of excellence that solidifies improved productivity and safety in our crane marketplace. ■