FMI

for the Built Environment

Fleet in the C-Suite:

The Strategic Implications of Equipment Management

By Mike Clancy and Will Gruy

Ever since William Otis invented the steam shovel in 1839, civil contractors have had a love affair with construction equipment.

In all that time, the industry has seen myriad innovations in the world of equipment, but the fundamental truth has remained: At its core, the construction equipment fleet is meant to facilitate the building of projects. Yet, somewhere along the way, many in our industry lost sight of this truth and became lovers of equipment for its own sake. We propose a concept that should be less controversial than it will be – that the equipment fleet is a strategic asset and should be managed as one.

Thought leadership from the world of financial portfolio management

The term "asset management" is broad and refers to both financial and physical assets. Financial literature generally views management of its assets as portfolio management – thus stressing the management of the portfolio as a whole (versus management of the individual components). We believe that adopting this portfolio view versus an asset-by-asset view is a foundational step in creating the organizational alignment needed to achieve strategic fleet management.

One common misconception regarding the goal of asset management is that its objective is to "make as much money from the asset as possible." This view lacks an appropriate focus on the implications of risk on returns and is not the recommended view in either physical or financial asset management. "The process of managing portfolios should focus primarily on managing risk rather than on managing returns."[1] Historically, physical asset management was often akin to maintenance management. However, as firms become more sophisticated and the demands to find efficiencies, more pressing, best-in-class organizations have adopted the idea of managing risk from the world of financial asset management. They've also incorporated this viewpoint into their equipment asset management—a shift that requires firms to proactively "take an expanded view of how assets are planned for, used, maintained and ultimately disposed of."[2]

The process of managing portfolios should focus primarily on managing risk rather than on managing returns.

Many heavy civil contractors experience misaligned incentives among different departments, which makes taking this expanded view—and acting for the net benefit of the company—more challenging within their current organization and incentive structure. Recognizing that portfolio management is predominantly

[1] Reilly, Frank K., and Keith C. Brown. "Investment Analysis and Portfolio Management." South-Western Cengage Learning, 2012.

[2] Campbell, John D., et al. "Asset Management Excellence: Optimizing Equipment Life-Cycle Decisions." CRC Press, 2011.

about minimizing risk – and in our case, total risk to the company over individual risk to a project or department – we can more readily take the expanded view of all our assets throughout their life cycles. Building an organization that can achieve this is key to leveraging the equipment function as a strategic asset.

What is risk?

Having a better understanding of what we mean by risk is critical to setting proper objectives for the equipment function. As with operations and estimating, the fleet should be organized to control risk to the organization above all else; a portfolio management view is helpful in achieving this end. Within the equipment function, there are two primary sources of risk. Risk on capital deployed is the risk of the equipment not earning its keep, while risk to operations is the risk of operations being negatively impacted by its equipment needs not being met. Both of these risks can be significant and incur both direct and indirect costs.

Risk on capital deployed

For most vertical (building) construction firms, return on equity is the key measurement of financial performance. This is because fixed assets are generally low as a percentage of total assets for construction managers, general contractors and specialty trade subcontractors. For example, for FYE 2018, the average net fixed assets as a percentage of total assets for general building contractors in FMI's financial database was approximately 4.5%. This has long been the rationale behind accepting such low industry margins; the amount of capital investment required is low, meaning smaller profit margins can generate disproportionately higher returns. Add this to the relatively lower risk of such work (largely outsourced to subcontractors via contract or insured with bonds or subcontractor default insurance), and a justifiable investment thesis can be developed. However, this calculus is turned on its ear in the world of infrastructure contractors. For the same time period, the average net fixed assets as a percentage of total assets for heavy civil and infrastructure contractors in FMI's financial database were nearly 31%, a dramatically different situation which calls for a focus on deployed capital.

Failure to generate a return on capital already deployed is the key problem associated with risk on capital deployed. The implication of failing to generate sufficient return is that the firm would be better off investing its capital in the financial markets rather than in its construction operations. However, since the investment in equipment is really an investment in the ability to execute construction projects, as an industry we have convinced ourselves of a fundamental untruth, which we must digress and discuss as "equipment profit."

The myth of "equipment profit"

As the contractor develops internal equipment rental rates, the target is perfection, as in perfectly predicting the use and cost experience of every piece of equipment in the fleet so that each hour is perfectly priced in both estimate and operations. Perhaps unsurprisingly, FMI has yet to meet the fleet manager who has achieved this state of perfection. What then is the fleet manager to do? In order to answer that question, we must examine behavioral motivations.

The fleet manager is likely concerned about under-recovering costs and hitting all of the company's projects (with additional charges to make up the shortfall). This result is unlikely to lead to amicable relations between fleet and operations, after all. Therefore, most fleet managers target a small amount of over-recovery in equipment (aka a "profit"). In fact, this profit is simply an overcharge to operations. When the amount is small, it is unlikely to impact the competitiveness of any particular project estimate. As a result, the impact on operations is negligible – basically, moving cash from one pocket to the other.

However, when the firm ends up employing the equipment at higher utilization rates than anticipated, the overcharge can become quite significant. And when rates are not frequently assessed and revised, revenue increases tend to exacerbate the overage. At that point, it is likely that the firm is overstating its costs at bid time and missing opportunities for this illusory "equipment profit."

Thus, the more critical risk on capital deployed is the indirect risk of not knowing your costs. If the equipment is under- or over-recovering, for example, the true cost of the equipment is not being incurred by the user. This distancing from the true cost creates misinformed incentives and decisions that, when trued up at the corporate level, are extremely difficult to identify and appropriately manage. No financial manager would accept not knowing the cost and performance of each asset in his or her portfolio, and neither should a physical asset manager. Yet, FMI frequently sees an acceptance around individual equipment rates that do not reflect economic reality, as long as the equipment account overall is on target. As discussed above, most equipment departments know that their P&L should ideally show neither a profit nor a loss. However, FMI has seen this achieved by balancing equipment categories that over-recover with other categories that under-recover. Just as you consider the return and volatility of each asset in a financial asset portfolio (in addition to the total portfolio performance), you must do the same in an equipment asset portfolio. Simply being content with an equipment account that balances on the whole can hide underlying inefficiencies and support "rational" decisions at the project or department level that are anything but rational for the company as a whole.

A central pillar in FMI's view of equipment management is that each class and category of equipment must support itself in isolation. The rates applied to each class and category should be set – and adjusted as necessary – to recover as closely as possible the actual cost incurred to deploy that class and category of equipment. In other words, the rate should be a predictable charge set to attempt to fully recover the future unpredictable costs of owning and operating the equipment. For the rate to be useful, it must reflect economic reality and be tracked—and variances reported—to produce actionable information. When rates over- or under-recover, for example, they do not reflect economic reality. In construction companies, we have seen the mispricing of small pieces of equipment (i.e., light plants and trailers) lead projects to source elsewhere – helping their project P&L while hurting the company's. When our equipment rates over- or under-recover, it means we do not know our real costs and can't make good estimating and asset allocation decisions. To prevent these unintended consequences, everyone must know and understand the rate and accept it as fair and reasonable. This is the first step in aligning the equipment department with the broader operations. This understanding and acceptance of the rates generally only occurs when they reflect the true economic reality of supplying the equipment.

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Dollars waiting on dimes: Risk to operations

The direct risk to operations can be even more significant, however. With equipment departments attempting to limit their costs and capital deployed, the conditions for penny-wise and pound-foolish decisions are often fertile. This leads us to another central pillar in FMI's view on equipment economics – that equipment uptime is the key success factor of the maintenance function, not maintenance costs.

Equipment that is up and available for use on the project should be the key focus of the maintenance function. When a piece of equipment is critical and has ongoing maintenance and setup requirements during operation, it may require a dedicated mechanic on-site to support a crew to prevent the loss of production experienced due to relatively minor issues. One client in the Midwest pointed out that its concrete paving crew of eight workers—earning night shift differential and overtime—cost well north of $6,000 per shift. When the potential liquidated damages of $5,000 per day for missing a completion date were added in, it became a "no-brainer" (in the client's words) to pay a mechanic to standby and support maintenance needs, spread setting and the like.

Not all companies understand the high costs of project downtime. When a fleet manager is evaluated or compensated based on his or her ability to manage maintenance costs, maintenance is inevitably deferred, or small problems that are a precursor to major failures are missed because there are no mechanics to conduct inspections and scheduled services. This shortsighted thinking leads to big, expensive and disruptive "emergency failures," causing disruption to construction schedules, production and quality issues, and excessive labor costs.

Asset allocation – what should you own?

Asset allocation is another foundational financial portfolio management element that should be applied to asset management. Asset allocation is the process of distributing capital across a variety of assets – in this case, equipment. For financial assets, this is generally a choice between risky (stocks and private equity) and less risky (bonds and fixed income) assets. For the fleet, it is primarily a decision about what equipment to buy, what equipment to rent, and how much of each will be needed.

Financial portfolio managers often begin the asset allocation decision by defining their objectives. This means focusing on our short-term and long-term needs and the relationship between the two. For those of us in the fleet management business, this means understanding the types of equipment that will be needed frequently in the future, the availability of rentals, and the impact on production a shortage of equipment of certain types would have. FMI usually recommends that companies purchase the quantity of large equipment needed to supply the slow periods of activity and rent the difference needed to operate during peak activity times. Exceptions to this would be "strategic purchases" meant to serve as prerequisites to compete in certain markets. For example, companies in the concrete paving business often have to own their own pavers—even if their utilization is fairly low—because there may be few rentals available in their local market. Likewise, many of our clients working in the Gulf Coast industrial corridor during the 2010-2015 industrial construction boom owned cranes because that equipment was unavailable for lease or rent.

Accrual for asset replacement is key to asset allocation. As our assets are used up in production, maintaining our levels of capital assets requires a constant churn of retirements and replacements. FMI has seen clients take two approaches to dealing with this asset churn. The first is reactive churn management, where companies run equipment until replacing it. This is often cheaper than rebuilding it, with the decision being made once the equipment breaks down. Proactive churn management aligns asset purchases to correlate with the "sweet spot" – the calculable point at which additional maintenance spending outpaces the benefit derived from continuing to own the piece of equipment. Creating and maintaining "churn charts" that track all of the pieces of equipment within a class by proximity in hours to the class's calculated "sweet spot" can help with financial planning, give a more comprehensive view of the fleet, and, most importantly, align the actions of fleet replacement with asset allocation rebalancing.

Fleet manager versus maintenance manager – which do you have?

Historically, most construction industry fleet managers are highly competent experts on equipment and maintenance, good at hiring and developing mechanics and managing the ongoing needs of today's technologically advanced fleets. Many of them are logistical and supply chain experts who make sure parts, mechanics and machines get to where they are needed without disrupting operations.

However, many fleet managers are not financial managers. In too many organizations, they are not included in the conversations about the types of work being pursued, nor the backlog and pipeline of future targeted work. As a result, they lack the information needed to make good, forward-looking decisions about the equipment portfolio. Too often, our fleet managers are hamstrung by a lack of information or the inability to get good data out of our operational reporting systems.

Tomorrow's fleet manager must be the best of all worlds. That means having all of the traditional fleet management skills – a strong understanding of the characteristics of the equipment in the fleet; the ability to dispatch parts, people and equipment effectively; and the ability to hire, develop and keep outstanding maintenance personnel. However, the future fleet manager must also understand technology (i.e., the use of telematics in generating usable data to make good fleet decisions); have a seat at the table when strategy is discussed to understand the impact it will have on operations changing requirements of the fleet; and be able to dispassionately assess the value to the firm of owning a piece of equipment as an asset within a portfolio. Too many people in fleet management roles just plain love equipment – and therefore have a default position of owning more than is strictly necessary. The future fleet manager must have a Wall Street fund manager's flexibility in assessing the assets in his or her charge and disposing of the underperforming ones.

The value of a portfolio management approach

Thoroughly and properly implemented, a portfolio management approach to equipment management will focus on managing risks as well as aligning information and organizational structures to best manage those risks. Efficiently managing both risk on capital deployed and risk to operations will lower the real cost of owning and operating the necessary fleet by making it more efficient. This will allow you to bid work more aggressively and more confidently, and execute it more productively. Managing the fleet like a portfolio requires a new breed of fleet manager – one equally comfortable in the boardroom and in the maintenance bay.

FMI Professionals

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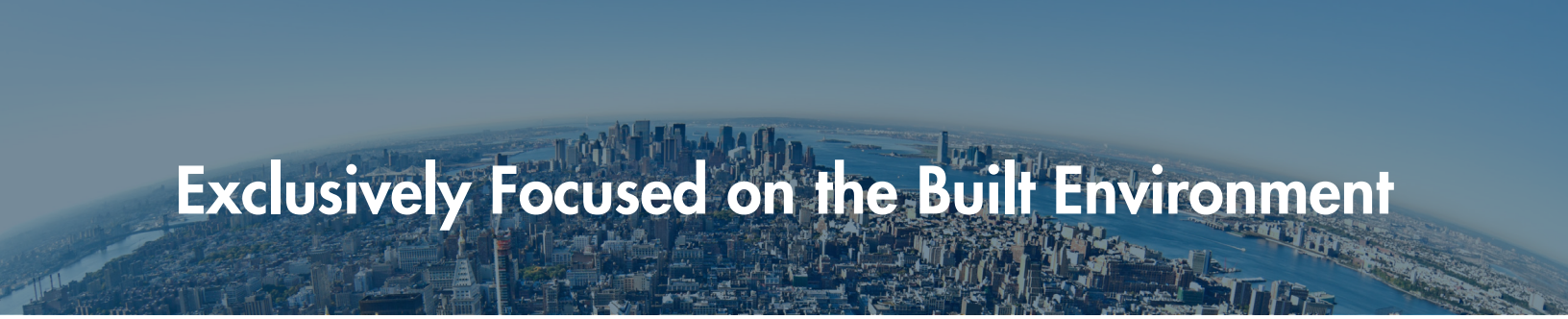

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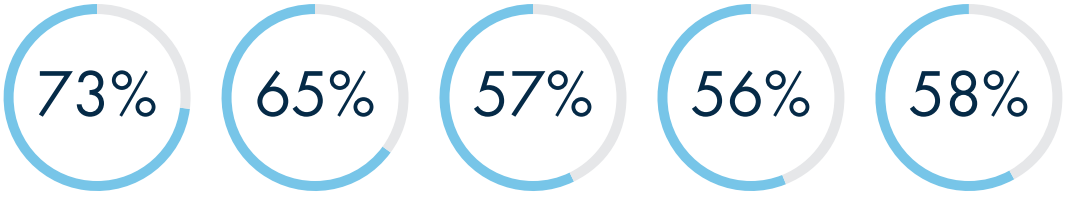

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