Asset Lifecycle Servitization: The new business revenue model for the construction sector

More and more asset owners are seeking to outsource maintenance for their assets over the whole lifecycle. Service or facilities management contracts are often offered by construction companies for assets they, or another, contractor has built.

Facing diminishing margins for capital projects, COVID pandemic disruptions and sporadic revenues, this new Servitization business model throws construction firms a lifeline. However, "contracting for outcomes" arrangements require a complete change in mindset: construction firms must now manage complex, but potentially lucrative, performance-based contracts and accurately model whole-life costs.

This white paper looks at the opportunities presented by delivering the full asset lifecycle business model, the transformative digital journey required, and the enterprise software capabilities firms must embrace to be able to compete.

Construction meets Operation and Maintenance

Traditionally, construction projects would be delivered and managed in two phases, typically by different companies. The construction phase is financed by capital expenditure: a project is designed, planned, costed, procured, contracted and built. Once complete, a handover usually takes place to another company to operate and maintain the built asset, financed as operating expenditure.

But increasingly, we're now seeing a change to this divide. Facing low sector margins, high risks and minimal profits for building assets, general contractors are realizing that they're walking away from more money on the table once an asset is complete. Contracts to operate and maintain assets are not trivial sums. With most asset lifetimes spanning many decades, there's a need for maintenance, refurbishment and possibly reconfiguration. The annual revenue for building maintenance and repair can typically range from $1.40 - $1.85 per square foot of building space.[1] Using the average replacement asset value (RAV) metric, best practice annual spending on industrial asset maintenance costs is 3% or less.[2] It is reasonable to conclude, therefore, that a maintenance contract for a building would typically fall within 3-5 per cent of the total asset cost per year. In terms of average longevity and use, a recent study looking at the tallest 100 buildings to be dismantled by their owners found that, on average, they had a lifespan of 42 years.[3] Over this

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[1] http://www.facilityservicespartners.com/facility-costs/

[2] https://www.onupkeep.com/answers/asset-management/how-much-should-i-be-spending-on-maintenance-for-industrial-equipment-and-assets

lifespan, maintenance contracts would be worth 120-200 per cent more than the original cost of the build. Moreover, the guarantee of significant operating revenues post-build allows contractors to lower their initial construction tender bids, increase competitiveness and win more projects.

Profitability in the sector no longer resides in creating a building or asset, but rather delivering a total package spanning integrated project and lifecycle management. It's an opportunity for constructors and manufacturers to significantly grow their business with exciting, long-term new revenue streams. It is no coincidence a recent report by McKinsey estimates construction sector disrupters could share a $265 billion annual profit pool.[4]

The full asset lifecycle model: selling and buying outcomes

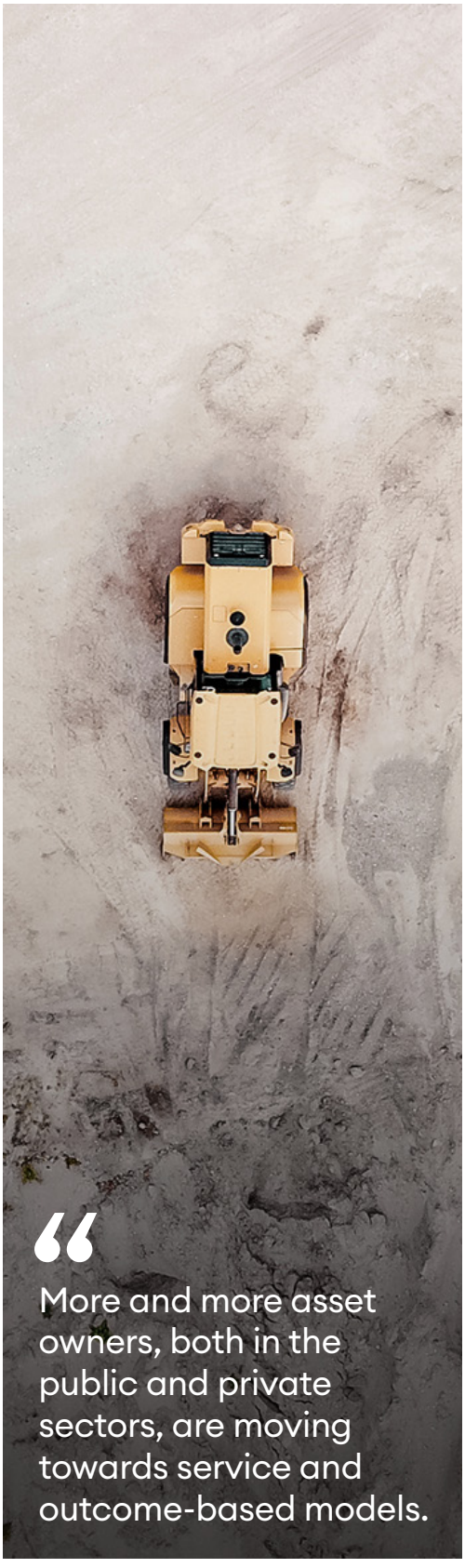
More and more asset owners, both in the public and private sectors, are moving towards service and outcome-based models. Just as the aviation sector has embraced 'power by the hour' contracts for aircraft engine flying uptime, so we can potentially envisage parallel scenarios for the build and operation of assets: for instance, hospital or hotel contracts being awarded based on quotas for a guaranteed annual availability of usable beds or rooms.

There's also a downstream impact. Subcontractors, for example a heating, ventilation, and air conditioning company, could price for ongoing operation, maintenance and availability of installed systems within a project.

Some of the interesting consequences of giving constructors cradle-to-grave service responsibility for their built assets surround longevity, quality, viability and cost of maintenance. A constructor who will ultimately hand over the building has no vested interest in minimizing whole-life costs or total cost of ownership for the client. Conversely, if a company will be operating and maintaining the building for its lifetime, it's in their interest to design and build it in a way that delivers maximum efficiency and sustainability, minimal degradation, and is easy and cost-effective to run, maintain and repair. The net outcome of this model is that clients enjoy the best value from their investment over its lifetime.

The role of digitalization and enterprise software

Globally, construction companies providing lifetime operation and maintenance services are currently rare. In the UK, in contrast, probably 20 per cent of UK construction companies now also offer facilities management business units. Of those that do, the adoption of transformative digital technologies, and in particular industry-honed enterprise software, are playing a pivotal role in realizing a servitized (service-based) offer. Real-time data, full visibility and insight sit at the heart of delivering entirely new capabilities such as service-level agreements (SLAs), field service scheduling and optimization. More and more, companies are looking to software solutions to manage and operate the maintenance phase to establish the visibility, performance reporting and control required to monetize this new asset lifecycle business model.



[3] Council on Tall Buildings and Urban Habitat (CTBUH) Journal, 2018, Issue II

[4] McKinsey & Company: The next normal in construction: How disruption is reshaping the world's largest ecosystem, June 2020

The impact of off-site manufacturing

Construction-integrated manufacturing (offsite or modular manufacturing) sees factory-made modules and components shipped to construction sites to be assembled and installed. New entrants embracing this approach are already disrupting the traditional construction space.

BoKlok, the homebuilding joint venture between construction company Skanska and Ikea, has already built some 12,000 homes across Scandinavia and is now developing sites in the UK. Using modern methods of construction, the wood-based homes are manufactured offsite, complete with Ikea fittings in place, and transported to the site for assembly. The off-site manufacture model offers efficiency, high quality, predictable costs, and eliminates costly delays caused by bad weather. Construction is also faster, less wasteful and demands minimal specialist skills.

To embrace this shift to modular construction, traditional contractors must change radically. They must be able to implement effective supply chain management, track inventory and co-ordinate the delivery prefabricated parts. Software such as IFS Cloud lets companies plan and optimize operations, standardize processes, and manage all the external parties involved in project design, manufacture, engineering and logistics.

Building Information Modelling (BIM), digital twins and understanding risk

Two of the biggest barriers to bidding for fixed-price maintenance contracts that may run for many years surround accurately understanding and quantifying cost and risk.

A 3D digital BIM model is about more than just design. Effectively creating a digital twin, the latest BIM technologies can also factor in other dimensions such as time and scheduling to inform construction. BIM models also allow accurate Lifecycle Analysis, a cradle-to-grave assessment of the environmental impact of a product, asset or service.

Already, we can see the opportunity to integrate directly to an ERP, allowing operation, maintenance and refurbishment elements to be calculated from the model data when tendering. The IFS solution already allows the BIM asset data to be integrated into all stages of the asset lifecycle process.

Becoming a disrupter – without being disrupted

Finally, becoming a sector disrupter need not necessitate a disruptive transition. One of the most attractive facets of the best-of-breed enterprise software approach is that a traditional construction company, having embraced IFS Cloud for building assets, can rapidly evolve when ready to deliver best-practice asset lifecycle operation, maintenance and service. Any required management, operational and other capabilities are simply added via seamlessly integrated modules, rapidly delivering sustainable business value through profitable and diversified new asset lifecycle revenue streams.

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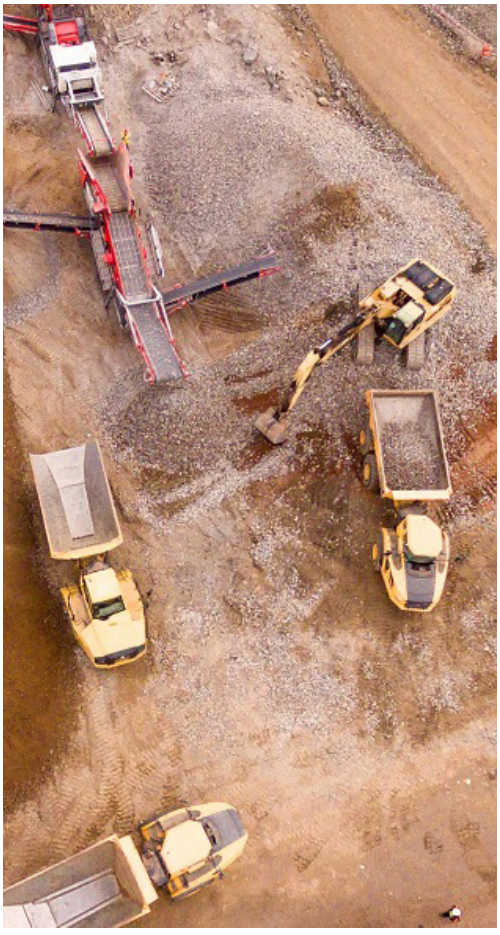

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