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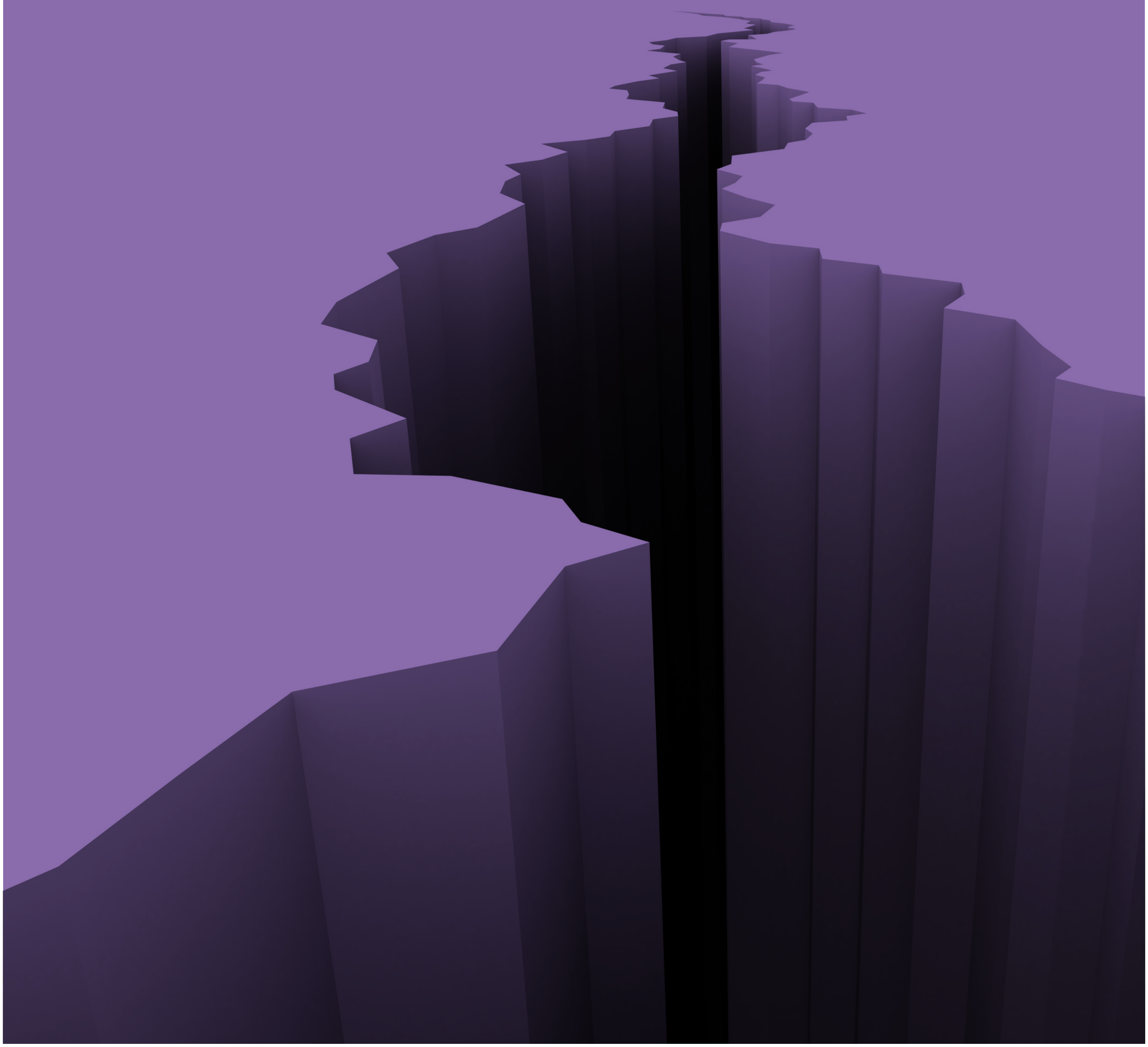
Mine the Gap

How Organizations Can Excel by Overcoming Information Failure in Management of Real Estate Assets



Today, every organization is a real estate organization

In a simpler era, companies and institutions viewed their real estate as assets to support operations. Only those organizations focused on the property business actively tried to generate value and risk-appropriate returns from buildings and similar assets.

Fast forward to today. An accelerated and volatile operating environment requires organizations to manage real estate for strategic advantage, even if property does not constitute their raison d'être.

Yet real estate, more than virtually any other domain of organizational activity, is vulnerable to information failure. The concept of information failure comes from economics and describes when inaccurate, incomplete, uncertain or misunderstood data can lead to suboptimal decisions and incorrect assessment of risk.

As pressures mount, organizations are realizing to an extent never before that information failure in real estate creates significant and often hidden costs. Solutions have been elusive, but advances in technology offer new potential.

While the London Underground famously warns us to "mind the gap," organizations now have tools to mine the gaps in data, gaining a full view and overcoming information failure. By integrating financial and operating information for fixed assets, organizations can make smarter decisions, minimize risk, optimize capital deployment and improve performance.

In this white paper, we will explore the changing environment for real estate decision-making, the causes of information failure, evolution of solutions to this problem and the hallmarks of organizations that are leaders in "mining the gap."

We will cover:

- How value creation has become a driving focus for chief financial officers and requires an understanding of both strategic and operational performance.
- How information failure is a vulnerability of traditional approaches to real estate assets. Financial managers are handicapped by ledger-driven systems that provide information on real estate costs without a complete context of operational or strategic information.
- Overcoming information failure requires flexible technology capable of a) aggregating diverse information including operational data and data derived from plans, maps, drawings, spatial and geographic sources, b) placing them within the context of related disciplines such as asset lifecycle, lease management and compliance and c) extracting insights in a form and language familiar to stakeholders in different disciplines within an organization.

The operating environment sees a tilt toward growth from survival

Facilities are at the heart of an organization, whether these are offices, factories, government buildings, schools or hospitals.

According to industry benchmarks, real estate generally represents the second- or third-biggest expense for most organizations, and facilities investments and operating costs have been found to represent on average more than 30 percent of companies' annual operating costs.

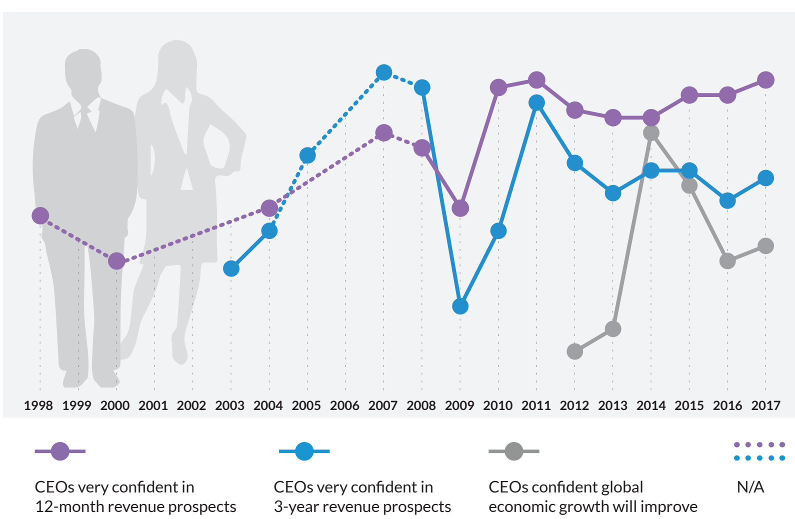
In the past, real estate and facilities management were an often-overlooked aspect of organizational planning. As Computer-Aided Facilities Management (CAFM) took hold starting in the 1980s, achieving the lowest cost per square foot was often the only metric that senior executives cared about at the organizational level.

Facilities management became more sophisticated as CAFM solutions gave way to Integrated Workplace Management Systems (IWMS) for managing complex property portfolios along with a higher priority for total cost of ownership (TCO) as a key metric. But the strategic role of real estate managers within organizations evolved slowly, if at all.

However, the landscape was rocked by tectonic shifts in the new millennium: a global recession; the rise of the remote and mobile workforce and the growth in the Internet of Things which makes it possible to collect and audit highly granular data about buildings. These developments put real estate teams at the forefront of organizational efforts to drive cost reductions, an imperative amid a severe economic contraction.

This effort met strong success, but most of the potential for expense reduction has been realized over the past decade. At the same time, the economy has regained its footing, and organizations are again planning for growth.

CEOs' confidence has grown over time



51% of CEOs in 2017 PwC survey were very confident in their three-year revenue prospects, a sign of optimism about growth, while they continue to put a high priority on cost reduction.[1]

Real estate is important for organizations as they position for growth.

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[1] PwC, *20th CEO Survey: Competing in an Age of Divergence*, 2017. Retrieved from http://www.pwc.com/gx/en/ceo-agenda/ceosurvey/2017/gx/growth.html

A survey of finance executives conducted by CFO Research found "a growing awareness of the importance of actively integrating real estate considerations into growth plans, above and beyond reducing occupancy and operating costs."[2] Among those respondents who said real estate makes a meaningful contribution to their organization, 56 percent said the most important objective for the real estate function was related to growth through expanding their business, improving profitability or increasing revenues. While the focus has shifted toward growth, the painful experiences of the global financial crisis are not forgotten. Cost control is now embedded in the DNA of most organizations while leaders see a need for selective investment to enable growth. Value creation and increasing effectiveness are rising in importance as expense reduction efforts stabilize.

"The challenge facing corporate real estate teams is to strike the right balance between making real estate work harder for less cost, whilst sharpening its value-add contribution to the overall business," Jones Lang LaSalle noted in a report.[3] In this new environment, CFOs are realizing that strategic value creation is now an integral part of their job.

Leveraging real estate assets to create more value has become a high priority of the CFO role. This dovetails with a trend toward active and lifecycle management of assets. To tackle this challenge, the finance team needs a holistic, entity-level view of both strategic and operational data.

Other secular trends are reshaping the environment as well.

In many geographies, asset values have increased, prompting owners to evaluate their capital commitments to real estate. They do so with heightened awareness of accountability to stakeholders such as partners, taxpayers and shareholders. This has increased the importance of maximizing return on investment and the strategic planning for infrastructure needs while a period of rapid developments in technology, historically low interest rates, political change and volatile currency movements add to the risk profile.

In addition, changes to international accounting standards for leased assets at public companies will take effect in late 2018 and early 2019. These effectively eliminate traditional off-balance sheet leases for terms of more than 12 months and will affect more than an estimated $3.3 trillion in lease commitments globally.[4] This will expose real estate to greater scrutiny from the C-suite, boards, lenders and investors.

Influences on Organizational Environment	Focus of Impact
Macroeconomic	Expense restraint, investment for growth
Technology	Mobile workforce, Internet of Things
Strategic	Drive for agile management and innovation, Focus on value creation
Market	Fixed asset valuations, capital allocation, forex volatility
Regulatory	Accounting changes for lease capitalization
Political	Pressure for transparency, shareholder/stakeholder activism
Real Estate	Need for benchmarks, Focus on asset lifecycle management, Fostering enabling workplaces

[2] CFO Publishing, *Working Smart: Value Management for Corporate Real Estate*, (2014).

[3] Duckworth, John. *Optimising Real Estate: Striking the Balance Between Cost and Value*," Jones Lang LaSalle, June 10, 2015.

[4] Schafer, Rob. *Market Guide for Integrated Workplace Management Systems*, Gartner, Feb. 29, 2016.

Fast tempo propels need for organizational alignment

As a result, senior management is being challenged to justify the capital deployed in real estate relative to other priorities, especially if these assets do not generate return on capital equal to the organization's core business.[5] The way in which an organization addresses this challenge impacts its performance, value and health.

These forces are propelling organizations to align their real estate strategies with their overall missions. Leaders realize they need a holistic real estate strategy that looks beyond the role of buildings as a mere support to operations. In this new view, facilities are seen as "a core productivity enabler… transitioning from a mundane expense item to a high-value and dynamic asset," as analysts at Gartner Research have written.[6]

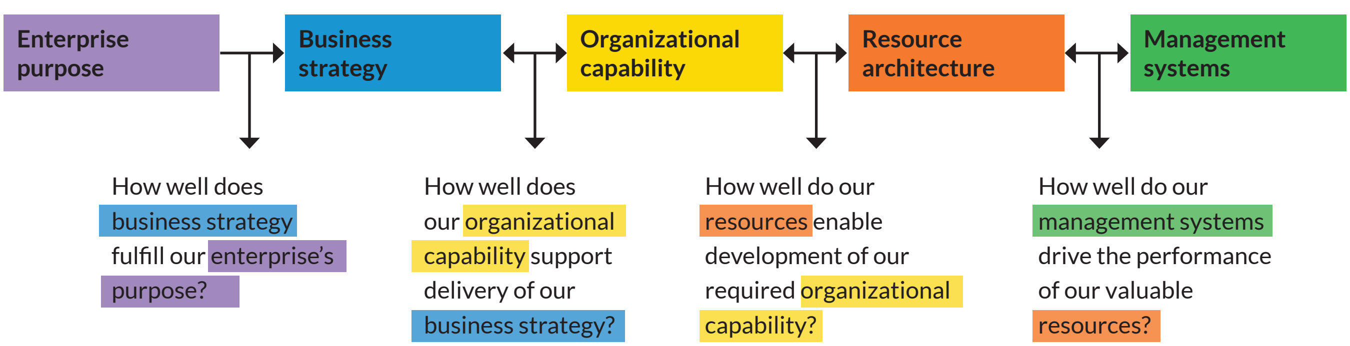
This approach demands that corporate priorities be represented in the management of the real estate portfolio and that the importance of fixed assets to operations be reflected within the organizational strategy.

Executives who previously focused within their own areas of expertise now more than ever must collaborate on decision-making that weighs both financial and operational considerations.

Writing in Harvard Business Review, Jonathan Trevor and Barry Varcoe of Oxford University's Said Business School said enterprise alignment requires a focus on fitting together a tightly managed value chain that connects purpose to strategy, organizational capability, resource architecture and management systems.[7]

The Interdependent Components that Make Up a Strategically Aligned Enterprise

The value chain is only as strong as its weakest link.



[5] PWC, "Real Estate Strategy and Real Assets," 2016.

[6] Schafer.

[7] Trevor, Jonathan; Varcoe, Barry. *How Aligned is Your Organization?* Harvard Business Review online. Feb. 7, 2017. Retrieved from https://hbr.org/2017/02/how-aligned-is-your-organization.

Nimble organizations need agile workplaces

These forces also make it necessary for organizations to adopt an agile approach to change management, and facilities are part of organizations' response to a drive for greater innovation and engagement. Facilities managers do this against a backdrop of other technology disruptions including the cloud, Internet of Things, mobility and big data.

Many enterprises are pursuing what Gartner has labeled the bimodal business approach, managing areas that are well understood with one mode that is optimized for predictability and managing areas of risk and uncertainty with a second mode that is optimized for exploration and problem solving.[8]

In real estate and facilities, mode one covers the traditional areas of responsibility such as repairs and lease decisions. Mode two covers the emerging areas of delivering facilities that support the evolution to more collaborative and innovative workplaces.

This is driving closer collaboration by the real estate team with IT and HR to yield a "more effective, agile digital workplace, which can in turn improve employee engagement, experience and ultimately productivity." [9]

What these trends mean for REFM

The processes of strategic alignment and change management are forcing shifts at many organizations.

Trevor and Varcoe say that commonly in the past, executives have focused on certain functions and parts of the value chain while ignoring others.

That quite accurately describes the real estate function in most organizations. It has historically been "marginalized and disconnected from the concerns and priorities of corporations' senior management and board of directors," Stephen Roulac wrote in the Journal of Real Estate Research.[10]

REFM professionals have traditionally not gotten seats at the top leadership table, and the real estate team has historically been seen as a back-office function, not a strategic partner of the C-suite.

In the new model of convergence, senior leaders, portfolio managers, finance executives, capital planners, asset managers, program directors and human resources specialists must share responsibility for important facets of property-focused decisions. The finance team needs visibility into operational information that addresses value-creation questions.

"Not to have a corporate property/real estate strategy is to put the enterprise at risk," Roulac notes.

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[8] Panetta, Kasey, *Scale the Bimodal Business*, Gartner Research, Nov. 9, 2016, Retrieved from http://www.gartner.com/smarterwithgartner/scale-the-bimodal-business/

[9] Sanchez.

[10] Roulac, Stephen E. *Corporate Property Strategy is Integral to Corporate Business Strategy.* Journal of Real Estate Research, Vol. 22, Nos ½, 2001. Retrieved from http://pages.jh.edu/jrer/papers/pdf/past/vol22n0102/06.129_152.pdf.

Real estate professionals are well positioned to make a strong contribution to organizations moving toward and practicing strategic alignment and bimodal business as the issues and challenges in their domain become more relevant to the broader business agenda. Their expertise can inform decision-making at the entity level that mitigates risks and exploits opportunities.

Why information gaps exist and the perils of information failure

To develop strategies and make decisions in this operating environment, organizations need data. The question for organizationally aligned, strategic real estate decision-making is not merely whether there's enough data but whether there is the right data in the hands of the right people, analyzed in the right way at the right time.

The idea of information failure can aid our understanding of this problem.

In economics and game theory, information failure is a type of market failure, when goods and services are not efficiently allocated. There are different kinds of information failure, such as asymmetries where one party has information that another doesn't, and moral hazard.

But generally, information failure exists when participants do not have so-called perfect information, meaning they do not have all the information needed to eliminate uncertainty in decision-making.

While mere mortals in the real world virtually never have the advantage of perfect information, the biggest danger of imperfect information is a lack of awareness that it is so.

Information failure exists when participants do not have so-called perfect information, meaning they do not have all the information needed to eliminate uncertainty in decision-making.

Organizations collect a huge volume of data and have automated systems for capturing, reporting and analyzing it. The enterprise resource planning (ERP) system is a fixture at most large organizations and supports the finance team with functions such as accounting and human resources. It's a backbone to their work and will remain so.

The real estate team leverages data through systems such as IWMS to manage facilities maintenance, space planning, lease management, room booking and capital projects. Those applications will remain critical to FM professionals.

The ubiquity of data at our fingertips leads many executives to assume they have information for their decision-making. But their view is often incomplete or there is latency in the data. The picture they see is similar to a landscape viewed through a keyhole – accurate but lacking depth, detail and context – and is an example of information failure.

The current systems such as ERP will remain valuable.

But to see a full view of the landscape, their ledger-derived, cost-focused data must be augmented with operational data such as that delivered by Building Information Modeling, Geographic Information Systems, the Internet of Things and other operational sources. These non-financial inputs are now often held within IWMS and similar systems that bring critical intelligence to the value-creation process such as building use, condition and sustainability. They also offer access to drawings, plans, maps and business graphics and bring in functional details to cost information that include spatial, geographic, location and benchmark data as well as intelligence from disciplines such as lease management, compliance and sustainability.

CFOs who realize that cost data is just one aspect of their decision-making are now looking for ways to take advantage of these rich data sources and mine the information gaps that exist.

Speaking in 2002 then U.S. Secretary of State Donald Rumsfeld said, "As we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. [11]

But there are also unknown unknowns – the ones we don't know we don't know."

In organizations managing real estate, these "known unknowns" and unknown unknowns" can become problematic for senior leaders especially if there is either the complacent belief that a full information view is at hand or a pragmatic judgment that any missing intelligence either cannot be efficiently gathered or is not critical enough to merit the effort.

These difficulties are understandable in light of the special challenges real estate poses to organizations attempting to maximize return, assess risk and make strategic decisions. Unlike financial assets, real estate is non-uniform.[12] Specifically:

- Real estate is not easily divisible.
- Each piece of real estate is unique and often highly idiosyncratic.
- The drivers of operating costs may be opaque.
- There are high frictional costs associated with acquisition and disposal.
- Relatively poor information is available for real estate compared with other asset classes.

In light of these limitations, organizations often struggle to make strategic decisions at the entity level because the right data for fully informed decision-making is fragmented, siloed or difficult to access (i.e. not in the hands of the right people at the right time or not subjected to the most meaningful analysis).

Leading organizations realize that this imposes cost and risk, even if they can't quantify it. Without full-picture information, executives may be slow to spot problems or they make decisions that fail to take account of "known unknowns" or "unknown unknowns." Without a full view of underlying events, they might miscalculate asset values or be unable to execute processes properly.

[11] U.S. Department of Defense Press Operations, News Transcript, news briefing Feb. 12, 2002, 11:30 a.m. EDT, retrieved from http://archive.defense.gov/Transcripts/Transcript.aspx?TranscriptID=2636 (2002)

[12] David J. Lynn, editor, *The Investor's Guide to Commercial Real Estate* (Washington, D.C.; Urban Land Institute, 2015)

Overcoming information failure requires data integration

So how can information failure be overcome for real estate management in an era of high-velocity change?

To support organizational alignment and value-added agile management, data analysis must be elevated to the entity level. The data and processes for real estate and facilities assets must interact with their financial counterparts in a synchronized fashion and give insight and intelligence in an integrated, common operating picture that unites stakeholders.

The resulting analyses need to be accessible to all stakeholders in a context that speaks to their roles and functions in the organization, relating operations to strategy and physical asset management to financial management.

Cross-functional decision-making will need to draw from unified data on capital asset investments and fixed asset operating expenses, a degree of coordination that has previously been elusive.

The mainstay metrics of finance such as total cost of ownership, total cost of occupancy, net present value, and return on capital investment can now be applied to the enterprise as the importance of an organization's asset base to decision-making becomes greater.

At the same time, the language of REFM – the operation asset management – needs to be applied within a financial context to shed light on risks and opportunities within the physical asset base that traditional financial analyses do not provide.

This requires a wide range of operational and strategic information, formerly held in data silos, to be visible at the organization level. Analyses need to be standardized so that all stakeholders, including those coming from the traditional finance and REFM perspectives, can understand and discuss a unified view of the organisation's asset base.

Indeed, a survey of enterprise finance executives by The Hackett Group found that their top priority was to integrate enterprise information. This "means bringing together financial and operational data to provide more effective, contextual information about performance. It also implies better alignment with forecasts, plans, and actions taken to close gaps," their report said.

Technology can bridge the gaps between finance and operational managers, offering visibility into data that was previously difficult to integrate and opening opportunities for organizational alignment. In addition, where information is unobtainable, highly flexible modeling engines allow for a range of scenarios to be explored, giving a higher level of confidence to potential outcomes.

New specialized applications can provide all roles with an integrated data model and common operating picture, allowing stakeholders to arrive at a shared perspective for resource allocation that they can agree upon and execute. These tools bring sophisticated modeling and what-if scenarios to the table, adding flexibility and functionality not previously available in ERP systems. Technology can also help an organization navigate the minefield of compliance and standards with options to choose or define its own standards for key metrics such as total cost of ownership.

The right applications have the power to make data integration painless for the user, so the process is highly functional and accessible. A single platform with a visual dashboard makes it possible to “mine the gaps” between financial and operational data, standardize and use benchmarks and place functional information in a financial context.

Examples of how bridging information gaps improves decision-making

With the integration of data from fixed asset systems and ERP systems and analytics, organizations can answer questions that they couldn’t before and have the means to estimate answers where they previously relied on hunches.

The resulting business value includes such advantages as lowering cost, faster budget approvals, learning from outliers and the ability to manage by exception. Descriptive (what has happened?), predictive (what could happen?) and prescriptive (what should we do?) analytical queries can be run.

For example, a capital planner may be comparing different projects to decide which to fund. It may be whether to build a new facility or renovate an existing one, or whether to undertake improvements to increase energy efficiency. His financial systems will provide details on costs and asset values, but it doesn’t integrate information from the facilities management system, which might reveal that a building is fully occupied so renovating will entail the cost of relocating the staff. The fixed-asset system can also provide a benchmarked metric on the condition of the facilities.

With integrated operational and financial data, more complete answers can be achieved to questions such as:

- How much does our asset base really cost including utilities, waste, taxes and other expenses?
- How effective are our Capital Projects?
- What data do we need to calculate financial benchmarks?
- Which benchmarks should we use and will we all use the same standards?
- Are we striking the balance between cost and risk management?
- Where should we be targeting investment in our asset base?
- How do we optimize asset lifecycle management?

The ability to conduct financial analysis with insight into operating information at the entity, portfolio and local levels is valuable to many roles in an organization.

- The asset manager can see the operational impact on asset value.
- Capital projects planner gains visibility into net present value, the impact of operations, asset usage and facility condition index.
- Real estate professionals can execute acquisition and disposal based on facility condition index in line with total cost of ownership.
- Facilities managers gain building/property financial benchmarking for resource targeting.

The matrix on the next page describes some of the challenges various stakeholders encounter, the improved process that unified analysis offers and the business value that can be gained from aligned decision-making.

Stakeholder	Challenge	Improved Process	Resulting Business Value
Facilities Director	Justify budgets, eliminate waste, and verify that spending on controllable costs is within industry benchmarks	Analyze integrated total cost model with all costs of occupancy and prorate them by square foot, square meter, and headcount to measure absolute costs, and the utility value delivered to the organization Benchmark expenses against portfolio averages to illustrate which costs and facilities are, and which are not, within industry norms Drill into "bedrock" costs that make up each aggregated sum	Lower costs by identifying and resolving outliers, inefficient equipment, buildings, and suppliers Faster budget approval by providing real cost context for budget choices Identify and learn from outliers, exemplary performance to replicate across portfolio
Capital Planner	Compare multiple capital projects with substantially different purposes (e.g., energy remediation versus new building) Evaluate investments that incur both capital costs and operational expenses	Evaluating projects based on present value and total worth using metrics. Analyze integrated picture of both capital expense and operating expenses	Better "apples to apples" analysis or more "even basis" alignment of capital with business mission through integrated analysis of both capital and costs
Program Manager	Quantify and justify the mission benefit of capital and cost decisions Make total costs transparent for strategic and audit purposes	Express costs in the same view as business units, building function, utilization, and geographic location	Better alignment of capital with mission through better understanding of how each part of the portfolio supports the business
Portfolio Manager	Track planning metrics used by real estate professionals to measure how assets and operational spend best support the mission and map costs to accounting practices used by finance for the P&L and balance sheet	Define framework for flexibly aggregating costs such as appreciation, depreciation, and cost of capital, giving the expected value over time alongside the accepted book value, hard costs, and depreciation	Faster approval and execution of capital plans by connecting them to the financial drivers needed to achieve them and the financial results that will accrue from pursuing them
Asset Manager	Quantify and justify the mission benefit of capital and cost decisions	Summarize asset value, capital, costs, and liabilities and compare them to actual business utilization	Lower costs and higher return on assets through closer alignment with the business they support

Key Takeaways

As you consider how your own organization is positioned to tackle the changing operating environment, you have an opportunity to overcome information failure through more powerful data tools.

The right solution unifies information about your real estate assets, capital and expense costs and the missions they support. By leveraging these insights, you can ensure your assets are tightly aligned with your mission and delivering maximum value. Expense control, visibility into total costs, optimal investment and utilization and improved decision-making result. For information on our Strategic Financial Analysis application, please visit www.archibus.com/sfa.

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