Surviving 2020: Allocation of asset spend in a new reality

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“Yesterday is not ours to recover, but tomorrow is ours to win or lose.”

Lyndon B. Johnson – November 29, 1963, Thanksgiving Day Address

It's only the first half of 2020 and the energy, chemicals, and resources sectors are in chaos. Prices, supply chains, and product slates that seemed stable in January are wildly volatile in this second quarter. Owners of production and processing facilities are scrambling to conserve cash and find ways to keep their assets operating.

It's not what you know. It's what you do with what you know.

Choosing wisely is exponentially more important. It could be the difference between losing, scraping by, or pulling ahead. And while there's a sea of information swirling about in this COVID-induced tidal wave, Advisian understands that it's not what you know. It's what you do with what you know.

In the world of brownfield portfolios, these aren't new problems.

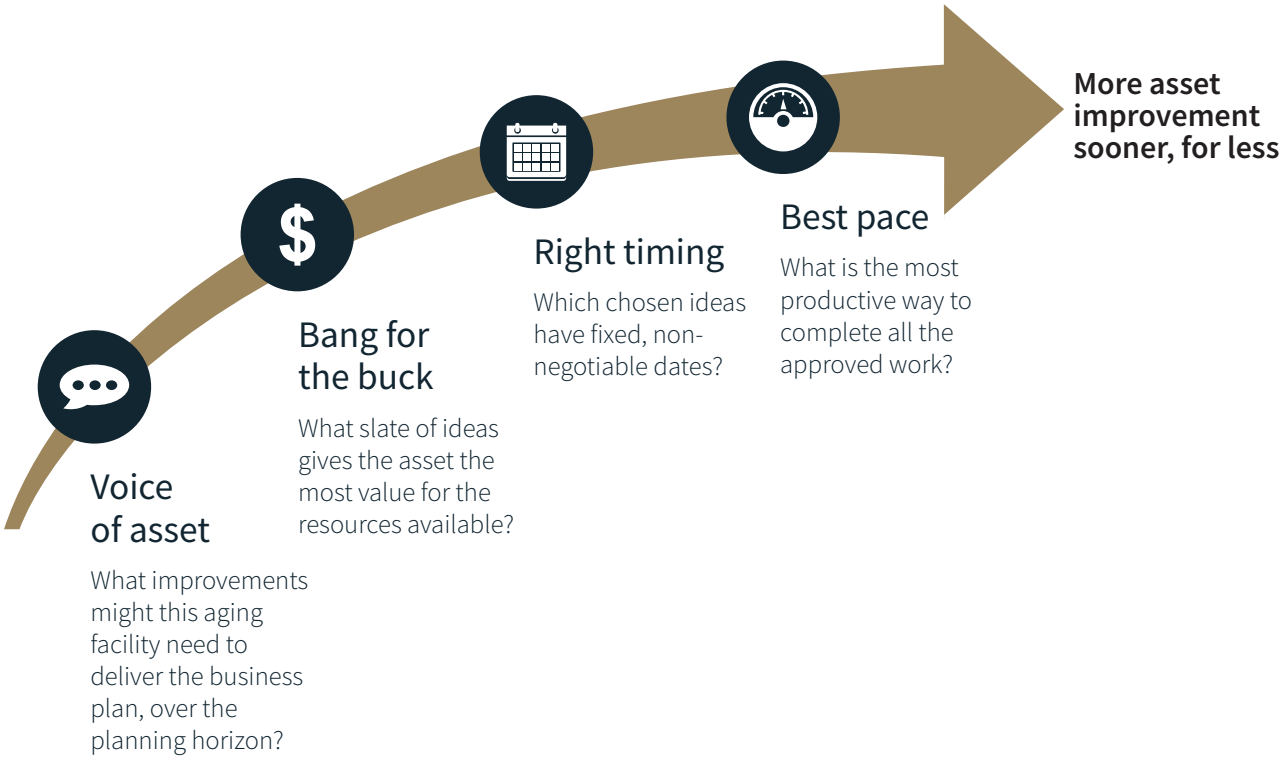
The rules of the capital program management game have generally stayed the same. The pieces are all still there — the queen, bishop, and knight are on standby, ready to react per their innate roles. But the stakes that influence how we deploy them around the board are higher than we've seen in a long while. That means it's more complex than ever to find the best strategy to conserve capital, maintain assets, safeguard your people, and deliver for your stakeholders.

CONCERN	BEFORE 2020	MID-2020 = HIGHER STAKES
ALLOCATION OF CASH	Senior management not confident	Tighter cash, even less reason to be confident
ALIGNED PRIORITIES	Differences between head office and sites	Changed priorities require reassessment on all sides
ASSET INTEGRITY	Slow-moving projects mean low rate of asset improvement	Big needs, little time, few resources. How do we deliver what's needed most, for the least?
ADAPTIVE RECOVERY	Projects driven by obsolescence and integrity	Complicated by sudden changes in products/operations

More asset improvement sooner, for less

Welcome to your 2020 survival guide framework. We'll begin with a more detailed explanation of the four key strategies. Then, we'll provide an example of a challenge that represents what many of our clients are likely facing, and how we'd guide them toward a solution.

Finally, being proactive instead of reactive is what will determine the state of your recovery. Therefore, we've identified a few things you should be asking yourself now to provide a clearer, easier path toward stability and sustainability into the future.



We've identified a few things you should be asking yourself now to provide a clearer, easier path towards stability and sustainability into the future.

1

Voice of the asset: What can't your asset live without?

There's a widening gap between business plan demands and what aging assets can reliably deliver. The best decisions align the business plan and the voice of the asset. Regardless of the business cycle, the safety of our people is paramount.

Can you maintain production levels while balancing new process safety parameters? Or do you lower production and relax the integrity operating window? Can you quickly reconfigure a plant site to handle a less expensive feedstock, to run harder, or to adjust a product slate? Will it be safe? For how long?

From what we've seen so far in 2020, sudden market changes have led to urgent adjustments in production requirements. And in some cases, a reconfiguration of production facilities. Add in capital constraints, tightening maintenance budgets, and waves of integrity-related work requests.

Even in normal times, landing on solid ground would be a challenge. The integrity and safety of your process facilities is essential. But a relentless asset decay curve may be undercutting everyone's best efforts to keep up. The potential for disconnects is extreme.

Despite the circumstances, you must deliver. But now with more risk and less cash. To help, you'll need expert technical insights on how operational changes and reconfigurations might affect existing maintenance and integrity management.

A capital project may not be necessary. It may be as simple as reducing a velocity, removing a contaminant, and/or increasing local advanced non-destructive inspection. Don't underestimate the long-term value that comes from identifying and monitoring critical degradation mechanisms that lead to low-cost mitigations.

Ask yourself:

- How well are you managing critical risk? Do you really know your bad actors, hot spots, or bottlenecks?
- What integrity work has been pushed into a CAPEX project but can't wait?
- Do you know what the rate of degradation is across our critical equipment?
- Corrosion, fatigue, vibration: Are they correctly assessed in a risk-based manner?

EXAMPLE: Voice of the asset

Problem: Premature replacement of aging asset before end of life

Example: Piping system with known corrosion issues, believed to be at risk of imminent failure

Solution: Adjustment of process stream to reduce corrosive elements; more frequent inspection

First step: Challenge assumptions and conditions in remaining life assessments on expensive replacements

2

Bang for the buck: How do I deploy resources when I'm losing them?

Money is tight; decisions are hard. The voice of the asset may ask for a long list of improvements, but there's likely only enough money for the top few. Nailing down the right voice with material degradation or process control insight enables OPEX to be spent effectively and CAPEX to be justified and executed at the right time and the best pace.

But how do you prioritize your list of brownfield projects? And now that you've parked some projects, those halted while under construction may pose a risk to operations. Abandoned project areas need to be walked down just like newly completed construction work. Even common items, like a blind flange installed but not properly torqued, need to be checked. Unused items need tagging and proper storage.

Remember to focus on the cash required to complete a job, not its total cost. That means looking at the job from today through to operations acceptance, the point where the asset is improved. If there's a parked project that addresses a high risk on your risk matrix and requires very little cash to pull it across the line, spend that cash. It may be the biggest bang for the buck.

Of course, stopping projects doesn't halt all project-related expenditures. Rental equipment must still be demobilized and returned, and contractual obligations must be vacated. Do this well now to avoid distractions during recovery.

At some point, further cash conservation may be false economy.

Ask yourself:

- What minimal expenditures on parked projects will create value later when you bring them back to life?
- What must you do to ensure that when a brownfield project has been parked while under construction, the integrity of the existing plant has not been compromised?

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EXAMPLE: Bang for the buck

Problem: Subjective priorities when allocating risk reduction budget funds

Example: Frequent substitutions of reliability budget items, growing share of budget pie

Solution: Combine consistency and rationing: Apply consistent ΔRisk ÷ $ approach to each backlog idea; release a quarter of annual budget funds each quarter

First step: Determine how consistent your risk assessment is within (not between) each site

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3

Right timing: How do I determine what's mandatory vs. what's optional? What outside promises are still valid?

Picking whether to park or proceed with projects is just one hurdle from an operations and facility integrity perspective. Everything with a date on it is suddenly up for grabs. Many of your suppliers' promises may not be met. Some of your outside obligations may now be negotiable.

2020 brings fresh uncertainty and threats that can affect the timely completion of surviving projects.

And if you aren't doing this already — if you're part of a regional environmental obligation — your airshed or watershed may suddenly be a lot cleaner than it was in January. Nail down a new deadline for your air quality projects.

For example, do suppliers owe you late-phase materials like valves and instruments? Consider whether vendor data and documentation are available for commissioning. Establish who will chase down these loose ends, receive and inspect deliveries, tag and store things where you can find them, keep track of what is still missing, and close out purchase orders. Then think about whether your degradation equipment can survive to the new date.

Ask yourself:

- Are you deferring a major turnaround (TAR)?
- What's the basis for your new TAR plan?
- What projects that you've just parked need to be ready for your new dates?

EXAMPLE: Right timing

Problem: Vendor documentation may not be available when needed

Example: Because of business disruption during early stages of the pandemic, the design team and vendors got disconnected, which creates higher technical risk

Solution: Assume nothing about the vendor's awareness of the latest revision or their ability to meet their previous commitments

First step: For every active project, and then those most likely to resume first, confirm relevant details for every item required for commissioning

2020 brings fresh uncertainty and threats that can affect the timely completion of surviving projects.

4

Best pace: How do I pace projects amidst all the moving parts?

During the 2008 – 2009 global financial crisis, some sites reported surprising reductions in project cycle times. How? Wait time almost disappeared. The work proceeded according to established standards, but no time was spent waiting for decisions, clarifications, or input. Remember that cadence is a powerful indicator of productivity. To achieve maximum output across the portfolio, you'll likely need to include some basic lean, agile, or blitz methods. That often means frequent contact over small increments of work, rather than large lagging reviews, as noted in the example.

This downturn is the best time to notice and cure the chronic waiting that's plugging up your project workflow. Better pace comes from better flow, not from cutting corners. Pace of completion is at the core of improving an aging asset faster than it is wearing out and falling behind. And we can't forget that the asset will still need hundreds of those completions as things return to normal. Even a partial improvement will make projects more predictable and your workforce more productive. Everybody wins.

For example, if Operations and Projects meet biweekly to discuss all the projects in one area of the plant, they will save time, reduce rework, and improve the end result compared to project-by-project meetings at major milestones. That's a strong driver of increased productivity.

What can you do right now? If there's any capacity available in Project Controls during this downturn, invest some of their time in looking back at project completions since January 2019.

1. How many projects achieved Operations Acceptance during that period? That's a usable indicator of your site's capacity to improve the asset. Chances are, there's a 30% – 50% improvement that's possible once you figure out what causes all the waiting. Hint: look for clogged inboxes and finger-pointing. Half of the blame is on each side of that pinch point.
2. Step one gave you information about your monthly or annual capacity. If you averaged 10 completions a month, you'd have also needed 10 Process Hazard Assessments (PHAs), 10 financial approvals, and maybe 11 or 12 front-end packages. View all these reviews and approvals as if they were traffic, rather than individual cars. You'll find ways to improve how Operations and Projects work together, saving valuable time for both. Start now; you'll benefit immediately, and they'll compound over time.

Ask yourself:

- At your demonstrated pace of completion, how long will it take to work through today's backlog of work requests?
- How many new work requests come in during a typical year?
- In hindsight, how often is "drop everything and work on this" justified, despite its impact on everything else?

EXAMPLE: Best pace

Problem: Brownfield project schedules usually perform worse than brownfield project costs

Example: Three projects survived the cutback because they are essential; how do we finish them when needed, with everyone spread so thin?

Solution: Maximize technical continuity on these three projects. Then, more frequent and shorter communications among all stakeholders to keep everyone on track

First step: Turn any scheduled monthly meetings into four weekly meetings that are each approximately 20% of the monthly meeting's duration

Remember that cadence is a powerful indicator of productivity. To achieve maximum output across the portfolio, you'll likely need to include some basic lean, agile, or blitz methods.

Surviving 2020 and beyond

Aging assets have a decay curve, and they face growing challenges. Regardless of the business cycle, the compelling business need is to get more asset improvement sooner, for less.

Consider this paper's four-part framework to help cope with the cash crunch. Reflect on how a clear, focused strategy could have helped even before the crisis, and how it can help you now as our industry emerges into a new reality.

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