Doing More with Less
Increasing Fixed-Asset Productivity in the Downturn and Beyond
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When companies need to generate cash quickly, they target inventory, accounts receivable, and accounts payable. Although these components of working capital are often a critical source of cash, even more capital is typically tied up in fixed assets. By rethinking operations, revisiting how funds are allocated, and shedding unneeded property, plants, and equipment, companies can sharply improve the productivity of their fixed assets, generating cash in the near term and a sustainable advantage over the medium to long term. But when rapid results are needed—during a downturn, for instance—managers often underestimate the importance of fixed-asset productivity or overlook it entirely, mistakenly viewing it only as a longer-term solution.

In fact, improving fixed-asset productivity can pay valuable dividends in all economic climates. During a downturn, many actions that boost productivity can generate cash, reduce costs, offset declining margins, and increase flexibility in a matter of months, all while creating a stronger position for the upturn. In times of economic growth, greater asset productivity allows companies to increase output from their existing capacity, absorbing sales growth and avoiding capital outlays.

Fixed-asset productivity can significantly increase cash flow by divesting unneeded or redundant fixed assets, reducing capital expenditures, and getting more from fixed assets year after year by making them work harder. Taken together, these actions reinforce one another and can generate substantial cash—especially in asset-intensive businesses. Resources can then be directed toward property, plants, and equipment that deliver the greatest payback.

Done right, improving fixed-asset productivity can increase EBITDA (earnings before interest, taxes, depreciation, and amortization) margins by two to four percentage points, on average, over the medium term.

Getting Started: An Asset Advantage Matrix

For many companies, wishful thinking clouds reality when it comes to understanding how much value their fixed assets truly deliver. But a clear-eyed, dispassionate view is needed when evaluating property, plants, and equipment. To this end, the road to greater productivity begins with a critical first step: identifying your company’s core assets. These are the assets that both underlie your strongest businesses and strengthen your competitive position. Unfortunately, few companies have performed this exercise—a major obstacle to improving productivity. To determine the strategic value of those assets, use a matrix like the one shown in Exhibit 1 and plot them along two dimensions: how advantaged the asset is relative to the competition and how attractive the underlying business is.

Assets that rank high on the first dimension include proprietary processes, technologies, and patents as well as plants that are close to important markets, have a leading cost position, or are flexible enough to adapt quickly to changes in demand or technology.

The second dimension measures the attractiveness of each asset’s underlying business. Attractive businesses are those with a strong position in profitable and growing markets, further development potential, and a healthy financial track record. Before

plotting assets and businesses on the matrix, it helps to rank the assets by their relative advantages on the basis of a set of criteria. (See Exhibit 2.) Once this exercise is completed, plotting can proceed quickly.

The result is a robust and realistic view of the relative competitiveness and performance of the existing fixed-asset network. An asset’s position on the matrix determines which actions to take.

- **Advantaged Asset, Attractive Business.** Assets in the upper right quadrant rank high on both dimensions. They are advantaged relative to the competition and they support the company’s strongest businesses. These are the core assets that companies should commit to owning and should continue to invest in over the long term. Since these assets have the highest payoff, they should always be the focus of any capital expenditures. Even in a recession, companies may be wise to accelerate their investments here to pull ahead of the competition and position themselves more strongly for the upturn. And because downturns often present opportunities to acquire core assets at bargain prices, companies should monitor the landscape and be ready to invest in such assets.

- **Disadvantaged Asset, Attractive Business.** Assets in the upper left quadrant are disadvantaged relative to the competition but support very attractive businesses. The key here is to mitigate the asset disadvantages and provide sufficient support to these fundamentally solid businesses. Companies have two options, depending on how important these assets are to the business. If advantaged assets confer a competitive edge, the best option is to restructure or improve the assets. But if business success is minimally dependent on asset advantages, then a better option may be to move to an asset-light model through partnerships, joint ventures, contract manufacturing, or outsourcing.

- **Advantaged Asset, Unattractive Business.** Assets in the lower right quadrant are highly advantaged but are linked to lower-value, less attractive businesses, such as those in shrinking markets or with intense competition. When a business requires repeated investments and a long-term commitment in order to sustain its market position, the company’s capital could probably be put to better use. Since profitability is limited in these situations, a company must dispassionately evaluate whether the asset is advantaged enough to justify maintaining the business. If not, it should divest the business and repurpose the asset or rigorously pursue a “cash out” strategy and extract as much cash as possible in the near to medium term. Some companies fall into the trap of overinvesting in end-of-life-cycle businesses, hoping that greater scale, automation, or other process improvements will bolster their profitability. They fail to recognize that competitors with very different operating models might be in a much better position to profit from these businesses.
Disadvantaged Asset, Unattractive Business. Assets in the lower left quadrant are noncore assets in weak businesses or turnaround situations that often consume valuable resources but never earn a return—even with repeated investments. These cash traps call for radical action. Companies should immediately halt any planned capital spending or improvements so that their resources can be directed toward higher-value businesses for a greater payback. They should keep to a minimum any maintenance, repair, or “debottlenecking,” doing only what is needed to meet basic regulatory requirements, if applicable. Selling an unattractive business, which is often a challenge—especially in a downturn—may not be an option. Instead, if it is turning a marginal profit, the business should be optimized through lean techniques, cost cutting, process redesign, and any other approaches that will slow the decline and improve margins. If cash contributions become negative,

Identify the businesses that will be difficult to defend in a downturn—and the assets that should be strengthened.

companies should close the business immediately and repurpose or sell the assets if possible.

A detailed matrix such as this can deliver valuable insights and clarify strategic and operating priorities, such as whether to take on or divest assets, when to reduce product complexity or offer greater variety, and how best to manage assets on a day-to-day basis. Many businesses migrate through the four quadrants as the life cycle economics of their products evolve. Therefore, it is important to check regularly whether the key success factors of a business have changed, and the effect of those changes on the asset base. Keep in mind, too, that a recession often reveals disadvantages in a company’s businesses and underlying asset base. So be sure to identify the businesses that will be difficult to defend in a downturn, and the assets that should be strengthened so that your investments deliver the greatest payback. At the same time, be prepared to adjust your overall level of fixed assets in response to the changes in

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**Exhibit 2. Rank Assets on the Basis of Their Relative Advantages**

<table>
<thead>
<tr>
<th>Asset 1</th>
<th>Asset 2</th>
<th>Asset 3</th>
<th>Asset 4</th>
<th>Asset 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost position</strong></td>
<td><strong>Proximity to customers</strong></td>
<td><strong>Availability of asset</strong></td>
<td><strong>Flexibility</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Leading position</td>
<td>Unique cost-to-serve and time-to-delivery advantage</td>
<td>Proprietary technology (intellectual property)</td>
<td>Adjustable in the near term (&lt;2 year)</td>
<td>Advantaged asset</td>
</tr>
<tr>
<td>Clear cost advantages</td>
<td>High barriers for competitors</td>
<td>Integration in material flows needed</td>
<td>Broad range of operating points</td>
<td></td>
</tr>
<tr>
<td>“Steep” supply curve</td>
<td></td>
<td></td>
<td>Multipurpose or multipurpose asset</td>
<td></td>
</tr>
<tr>
<td><strong>Cost position</strong></td>
<td><strong>Proximity to customers</strong></td>
<td><strong>Availability of asset</strong></td>
<td><strong>Flexibility</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Top-quartile position in supply curve</td>
<td>Leading cost-to-serve position, but only limited barriers for competitors</td>
<td>Proprietary technology (intellectual property)</td>
<td>Product portfolio and operating point adjustable, but not in the near term</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standalone asset (no integration in material flows needed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost position</strong></td>
<td><strong>Proximity to customers</strong></td>
<td><strong>Availability of asset</strong></td>
<td><strong>Flexibility</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Medium-tier position in supply curve</td>
<td>Position (cost-to-serve, time-to-delivery) on par with competitors</td>
<td>Proprietary expertise in operating asset</td>
<td>Some flexibility in adjusting the asset to various demand scenarios</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost position</strong></td>
<td><strong>Proximity to customers</strong></td>
<td><strong>Availability of asset</strong></td>
<td><strong>Flexibility</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>“Flat” supply curve</td>
<td>Proximity to customers with low potential for differentiation</td>
<td>Relatively easy to acquire</td>
<td>Low flexibility to demand scenarios</td>
<td></td>
</tr>
<tr>
<td>No significant cost advantages feasible</td>
<td></td>
<td></td>
<td>Product portfolio hard to adjust</td>
<td></td>
</tr>
<tr>
<td><strong>Cost position</strong></td>
<td><strong>Proximity to customers</strong></td>
<td><strong>Availability of asset</strong></td>
<td><strong>Flexibility</strong></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Disadvantaged cost position</td>
<td>Disadvantaged location—for example, unfavorable logistics</td>
<td>Free licenses available</td>
<td>High utilization rate technically required</td>
<td>Disadvantaged asset</td>
</tr>
<tr>
<td>Only swing production feasible</td>
<td></td>
<td>“Off the shelf” asset</td>
<td>Dedicated asset (only a few products)</td>
<td></td>
</tr>
<tr>
<td><strong>Differentiation potential:</strong></td>
<td><strong>Strong</strong></td>
<td><strong>Medium/strong</strong></td>
<td><strong>Medium</strong></td>
<td><strong>Medium/weak</strong></td>
</tr>
</tbody>
</table>

Source: BCG analysis.
demand that a downturn generally brings. (See the sidebar “Adapting to Lower Demand.”)

By showing the relative strengths of a company’s businesses and underlying assets, the matrix can often reveal ways to optimize the business model. For instance, a company with core capabilities in product development, marketing, and sales but with few differentiating assets would do well to pursue an asset-light model and outsource production. However, when a company’s own assets and production technologies provide a key competitive advantage and create entry hurdles for competitors, keeping those strategic capabilities in-house and building on them can pay major dividends. But since an asset-advantaged business model requires ongoing investment in order to defend market position, keep pace with technology, and adjust to evolving product life cycles, companies can sustain only a limited number of such businesses and must be willing to support them.

The final step is to capture all planned capital expenditures and determine how much cash is generated by each asset for each business, site, and value-adding step. Compare these data against industry standards and competitive benchmarks for a clearer sense of the overall productivity of your fixed assets and their potential for improvement. Where cash flow is concerned, looking forward is more important than looking back. Assess factors such as where the asset is in the economic life cycle, how robust the cash flow is, and what the likely reinvestment needs will be. Especially in asset-intensive businesses, managers must understand how many businesses can be sustained with reinvestments. This requires a commitment to support the most advantaged assets with the most attractive underlying businesses as well as to reduce reinvestments in less attractive ones. The second factor is especially important.

Companies should invest far more in their attractive businesses than in their unattractive ones.

**Taking Action: Five Improvement Levers**

It takes disciplined effort and a great deal of discussion to rank and cluster all fixed assets and to create this degree of transparency into productivity and costs. But an asset advantage matrix is needed to align management on strategic and operating priorities—and on which actions to take to reduce overall fixed assets, increase their productivity, or achieve a combination of both. Five improvement levers, systematically applied, will help your company dramatically improve the productivity of its fixed assets.

**Sell noncore assets and activities.** Systematically review the asset matrix for noncore or underused property, plants, and equipment and explore short- and long-term opportunities for divestment, sale, and lease-back agreements, and for outsourcing instead of owning. Also, use the matrix to challenge “make versus buy” decisions. Many decisions that once made sense no longer do because business conditions have changed. In an economic slowdown, for instance, it may be prudent to bring outsourced components back in-house to keep people and machines more productive. In other situations, offloading some aspect of production or logistics can lead to major improvements. Sometimes, by outsourcing one or two products and transferring some to other production facilities, companies can free up a costly asset and divest it. As a rule, if outsourcing selected activities can deliver a significant impact—such as a full plant closure or the complete elimination of a line of costly equipment—making the change will pay dividends.

Check in regularly with third-party providers of services such as contract manufacturing or logistics to see if they have overcapacity that could result in further cost savings. Also, carefully review each step of the value chain. Outsource or divest activities that are not strategic or cost effective, and shed any associated property, plants, and equipment. One industrial-goods company with a multistep production process decided to outsource part of the process to a third-party contractor with such scale and asset advantages that the price of the outsourcing contract was no more than the cost of in-house production. At the same time, the company was able to close two asset-intensive plants and reduce its maintenance and repair expenses by 30 percent.

**Prioritize capital outlays.** Companies should invest far more in their attractive businesses than in their unattractive ones. This is hard enough to do in a strong economy because it usually means not investing at all in some businesses. In a recession, however, this rule should be followed even more strictly. Stop all...
capital spending unless it is earmarked for the top three to five investment areas in the company’s core businesses, where the impact will be greatest. At the same time, think about how the downturn might permanently change the business landscape and which planned projects will be less attractive as a result. These projects also should be stopped immediately. Using the same lens, think about how your company could capitalize on the new landscape. Identify and accelerate any projects that will strengthen your competitive standing and position you for the upturn.

Armed with a detailed asset matrix, managers can set clear priorities about where and where not to focus.

Adapting to Lower Demand

In the recent global downturn, some companies have seen demand drop by 30 percent or more. In the face of continued economic uncertainty, companies must develop different demand scenarios with trigger points for escalating actions to the next level—and adapt their fixed-asset networks accordingly. (See the exhibit “Adapt Fixed Assets to Expected Demand.”) For instance, if demand has dropped by 20 percent and a recovery is expected to bring a market growth rate of 5 percent per year, demand won’t return to prerecession levels until 2013. In that scenario, it is important to look for ways to consolidate production, eliminate unused capacity, and shut down underused facilities. Where possible, reduce complexity in product and customer portfolios to increase asset productivity. If your company expects demand to return to prerecession levels sooner—say, by 2011—more flexible options include temporary shutdowns and shorter workweeks.

To further increase flexibility, make sure your equipment has a broad range of utilization rates. Some equipment runs well at 80 to 95 percent utilization but must be shut down if utilization drops to 50 percent. This limits flexibility during a downturn, so use equipment with a wider utilization range whenever possible.

Adapt Fixed Assets to Expected Demand

Demand scenario: Demand drops by 20 percent, recovery is driven by market growth

Decrease asset levels in response to different demand scenarios

Source: BCG analysis.
valuable resources. Review and prioritize all capital spending—even small maintenance-and-repair projects, which often fly under management’s radar screen but can have an impact when added up. This may mean taking a hard look at sacred cows and making tough, unpopular decisions, such as closing a plant under construction if it becomes clear that the postrecession environment will not support it. Avoid investing in situations with high exit hurdles—such as assets with long payback times. Often the exit hurdle comes in the form of an emotional commitment to a pet project. Better to dispense with these as quickly and dispassionately as possible, cutting the losses and the legacy of spending they have created. And halt any ongoing or planned investments in assets for underperforming businesses—especially turnaround situations—that will be sold, phased out, or closed in the near future.

Instead, allocate funds to the core assets of your most strategically relevant businesses. This will be money well spent, allowing your company to build on its strengths and increase its competitive advantage. Following this approach, a chemical company not only restricted investments in large projects but also created a system of guidelines for small investment budgets. Only attractive and advantaged businesses received the full amount of these small budgets. The budgets for attractive businesses with disadvantaged assets and for unattractive businesses with disadvantaged assets were reduced by 20 percent and 40 percent, respectively. Unlike larger, multiyear projects, whose budgets can be slower to redirect, cutting back on these smaller investments had an immediate impact on cash flow. As a result, the company was able to reduce its overall budget for capital expenditures by 26 percent while increasing the capital earmarked for growth businesses by 20 percent.

**Avoid investing in situations with high exit hurdles—such as assets with long payback times.**

**Reduce product and customer complexity.** Complexity in product and customer portfolios saps fixed-asset productivity and limits flexibility. For example, a complex product portfolio results in frequent changeovers, ramp-ups, and ramp-downs and can lead to broad production networks with numerous assets dedicated to specific products. This adds significant costs—often hidden. Look for ways to streamline and simplify your company’s product portfolio, customer accounts, and capital projects. At one manufacturer, regional sales offices had a history of requesting product variants to meet local market needs. The result was a large, complex portfolio with too many small items that were tying up valuable production capacity. By slashing the portfolio from 56 items to 14, the company was able to reduce changeovers, increase the length of production runs, close one plant, and cut labor costs. Taken together, these changes increased production output by 30 percent and reduced total fixed costs by 15 percent.

As this example shows, changes such as these can lead to major, breakthrough improvements, but many companies don’t fully understand the true cost of complexity. To achieve greater transparency, analyze the total costs of products or of serving customers, including the sometimes invisible cost of complexity. Weigh the increased revenues that greater variety or differentiated products and services could deliver against the added costs. The asset matrix can help ensure that the benefits of differentiation aren’t offset by the increased costs of complexity and inflexibility.

By reducing complexity, companies can also respond more quickly to changes in demand. For instance, one global manufacturer experienced a 30 percent drop in customer orders during the recent downturn. Partial plant closures helped conserve cash, but more dramatic measures were needed in order for the company to survive. An analysis of the company’s product portfolio showed that 30 products had low strategic relevance and made a minimal contribution to the bottom line, after adjusting for the added cost of complexity. The immediate phaseout of these products sharply improved the adaptability of the fixed-asset network, allowing the company to shut down one plant completely and reduce fixed assets by 25 percent within 12 months.

**Increase returns from production assets.** To get more from your production network, match asset characteristics with the needs of specific products and customers. For example, some plants are designed to produce a small number of products at high volume for greater economies of scale. Others are designed for flexibility, with short changeover and ramp-up times that are best suited...
for products with volatile or unpredictable demand. Looking across your company’s production network, define the roles of specific plants, consolidate products with similar characteristics, and explore ways to reallocate products across the network for greater cost savings, flexibility, and efficiency. Make sure to use the right assets for each product group. One manufacturer we worked with was using high-speed packaging lines to run low volumes of product with frequent changeovers, which reduced overall effectiveness, eliminated scale benefits, and resulted in a higher cost per unit than if the company had used more flexible, less technically complex (and less costly) lines. By defining specific asset roles—such as “high-volume packaging asset” and “low-volume packaging asset”—and setting strict guidelines for allocating products to assets, within six months the company was able to increase output by 34 percent and reduce costs per unit by 25 percent.

Focus on getting the most payback from your critical assets. Steer your highest-margin products to the plants and equipment that your company owns. If capacity is tight, consider outsourcing lower-margin products, discontinuing them, or turning down orders instead of investing in new assets. With an eye toward capacity constraints and economics, revisit how your company schedules individual product batches. For instance, rethink production schedules to ensure that valuable bottleneck assets are used on the most profitable products instead of wasted on less profitable ones. Systematically prioritize products, starting with the highest-margin items, moving on to medium-margin ones, and skipping the low-margin products entirely if necessary. At the same time, direct sales and marketing efforts toward higher-margin products to move them more quickly and increase profitability. A company we worked with increased the profits from one piece of equipment by 30 percent within 12 months simply by combining a higher-margin product mix with a focused sales and marketing effort.

Finally, develop a long-term fixed-asset strategy. Although many changes will generate cash in the near term, the full benefits of fixed-asset productivity are realized over time, so looking toward the future is critical. Develop a range of supply-and-demand scenarios and map them against the existing asset network, looking for potential problems and gaps that may need to be filled. For example, analyze where you’re likely to see regional growth, advances in technology, or the need for a leading cost position, and adjust your fixed-asset network accordingly. Also, look closely at site infrastructure costs, such as those for steam generation, security, and wastewater treatment, which can offset the advantages of the individual asset.

Explore investment alternatives. Commit to owning assets only in your company’s core attractive businesses; otherwise, don’t invest the capital. Sticking to this commitment can take enormous discipline, but it will pay off. When faced with an apparent need for fixed assets, look for other options whenever possible, such as repurposing or extending the life of existing assets, or adjusting the company’s business model. If capital spending is unavoidable, exhaust all low-cost options, such as equipment reuse or repurposing, time-sharing, and secondhand purchases. And look for bargains: an economic downturn often presents opportunities to buy assets or gain access to contract manufacturing capacity at fire-sale prices. When feasible, consider moving parts of your operations to low-cost countries, where assets may cost considerably less or where cheaper labor reduces the need for automation or other costly equipment.

Finally, rethink your company’s business model. For nonstrategic assets and activities, or when an advantage is simply not achievable, look for opportunities to gain the needed capabilities through a partnership or by outsourcing. Seek to design asset-light business models and minimize the number of assets you own by renting, partnering, or outsourcing. Be more like Nike, which focuses only on its core strengths of design, marketing, and branding and outsourcing everything else—including manufacturing.

Applied properly, these actions build on and reinforce one another rather than working at cross-purposes. The asset advantage matrix ensures that companies see the big picture and that actions are aligned with the overall corporate strategy. In this way, counterproductive measures—such as selling off a plant that was earmarked for manufacturing a new product—don’t mistakenly occur.
A fixed-asset advantage cannot be created overnight. Although these actions will increase productivity in the near term, companies must assess the long-term tradeoffs as well. For example, reducing assets while keeping output volume stable will have different consequences than will keeping the same level of assets while increasing output volume. Both increase fixed-asset productivity, but each positions a company differently for the future. To ensure that near-term cost cutting doesn’t jeopardize future options, opportunities, and overall viability, align any productivity-improvement efforts with your company’s long-term strategy.

**Making It Work: A Road Map Forward**

There is no shortage of tools, measures, and methodologies designed to improve productivity: Six Sigma, lean programs, and other operational-efficiency efforts all stake a claim in this arena. But weighing one approach against another is a challenge and raises questions that are not easily answered. Six Sigma can improve the productivity of a fixed asset, but could better results be achieved by divesting the asset or sharing its use through a partnership? Manufacturing in a low-cost country can boost margins and competitiveness, but how sustainable is the advantage?

To ensure a clear view of the bigger picture and realize the greatest improvements, companies must consolidate all the individual action levers and integrate them into a long-term road map, balancing the tradeoffs and creating backup plans if initial assumptions are wrong. (See Exhibit 3.) The goal is to create an optimal asset network that considers product mix, strategic priorities, market trends, location, flexibility, factor costs, and supply chain variability. This road map becomes a blueprint for the future.

To ensure robust fixed-asset productivity gains, companies should monitor their ongoing productivity performance. Looking at sales or EBIT in relation to total assets is of limited value because assets and their productivity measures vary greatly. A better approach is to use a combination of basic performance indicators for all assets plus additional indicators for specific asset clusters and improvement actions. Then link this monitoring process into the company’s regular reporting routine and the milestones of the improvement road map. Make sure that any measures taken to generate cash in the downturn align with the future blueprint for the fixed-asset network and won’t jeopardize plans or limit options.

The key to surviving a downturn and winning in the upturn is having a core base of productive, advantaged assets in your most attractive businesses. This forms the basis of continuing competitiveness and profitability. By having the right assets—and making them work harder—companies can stretch their capital expenditures and get far more from their investments.
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For Further Contact

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