

Opportunities for Action in Operations

The New Economics of Global Advantage: Not Just Lower Costs but Higher Returns on Capital

THE BOSTON CONSULTING GROUP



The New Economics of Global Advantage: Not Just Lower Costs but Higher Returns on Capital

Companies that are considering going global—and even some that are already operating globally—may be overlooking a potent source of competitive advantage in their offshore operations: the capital advantage. To date, much of the motivation driving the rapid globalization of operations has come from labor cost savings. But companies seeking to build long-term advantage from operations in rapidly developing economies (RDEs) should also address the capital advantage.

In our experience, the capital advantage to be gained in RDE-based operations can boost a manufacturing facility's return on capital by as much as six percentage points—while also generating a host of operational and strategic benefits. These include significant reductions in investment hurdles, fixed costs, break-even points, and minimum scale; enhanced flexibility; and easier risk management. What follows is an exploration of the underlying factors driving the capital advantage in RDEs, the financial and strategic benefits that such an advantage conveys, and its implications for operating models.

Factors Driving the Capital Advantage in RDEs

RDEs create opportunities for a new kind of capital productivity, thanks to three fundamental conditions:

- Assets often cost less to buy and maintain in RDEs than in highly developed countries

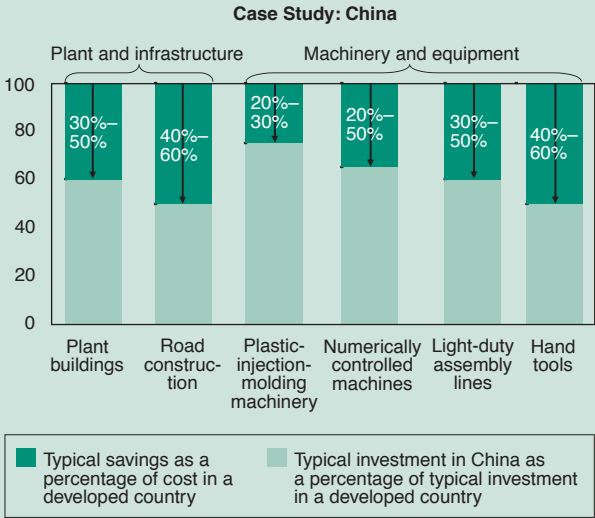
- Companies can often use fewer and smaller assets in RDEs than they would need in highly developed countries
- RDE-based business models often permit higher capital productivity than companies can achieve in highly developed countries

Assets often cost less to buy and maintain. In many RDEs, setting up a manufacturing site complete with grounds, buildings, roads, power, and water lines can cost 60 percent of the price tag for a comparable facility in a more developed country. Savings come not only from substantially less costly construction-labor, engineering, and architectural services but also from less expensive construction materials. For example, steel can cost 40 percent less in China than in the United States or Western Europe; commercial-grade heating, ventilating, and air-conditioning equipment 50 percent less; and precast concrete components 30 to 40 percent less. In addition, local communities within RDEs, competing fiercely for foreign direct investments, often make land available under very favorable conditions.

A second area of savings is machinery and equipment, which often cost 20 to 60 percent less for items of comparable quality. The Boston Consulting Group's industrial clients have reported saving 20 to 30 percent on plastic-injection-molding machinery, 20 to 50 percent on numerically controlled machines, 30 to 50 percent on light-duty assembly lines, and 40 to 60 percent on hand tools. (See Exhibit 1.)

Depending on how much locally made equipment they use, companies operating in RDEs can realize such investment savings on 20 to 80 percent of a plant's fixed assets. Among the major RDEs, China currently provides the largest savings potential, thanks

Exhibit 1. Setting Up a Manufacturing Site Can Cost 60 Percent Less in an RDE Than in a More Developed Country



SOURCES: BCG case experience; market interviews; press search; BCG analysis.

to offerings in a wide range of domestically made industrial equipment. Across RDEs, the amount of locally made equipment available to replace imported equipment is expected to expand quickly over the next few years as RDE-based industrial-equipment companies upgrade their design and manufacturing capabilities.

Companies can often use fewer and smaller assets.

Most plants in developed markets are heavily equipped with sophisticated machinery designed to replace large amounts of costly human labor. In RDEs, that dynamic is reversed. Manufacturing in RDEs presents a unique opportunity to lighten a company's production assets and reconfigure production

processes to realize the full value of skilled human labor. A European automaker that built a new car plant in Romania was able to reduce its total capital investment from a planned \$900 million to \$650 million by substantially decreasing the level of automation. Rather than using 1,000 robots for welding and other tasks, the plant uses just one robot to install windshields—and 2,000 workers to do everything else. The cars take twice as many man-hours to assemble as do equivalent cars in Western Europe, but because labor rates are 85 to 90 percent lower, the new approach should save the company more than 10 percent per car in manufacturing costs—on top of the substantial savings in capital equipment.

In another example, a major European manufacturer of metal components built a facility in China, investing only 40 percent of the capital it would have spent in the West for a site that could generate comparable output. The company actually went into its archives and built the plant the way it used to build plants 40 years ago. The new facility's staffing levels are more than triple those of Western plants, but its operating margin is equivalent and its return on capital substantially higher.

In some instances, companies moving to RDEs take an even more radical approach, rethinking make-or-buy decisions and revamping entire production chains. Rather than replicating the more integrated setups typical in developed markets—whereby each plant commonly manufactures its own components, sub-assemblies, and finished products—these companies make extensive use of the rapidly developing local-supplier base found in RDEs. For example, when a global automotive company was setting up a new plant in Brazil, it decided to locate key suppliers right inside the factory, where they could work in close conjunction with the carmaker's assembly process.

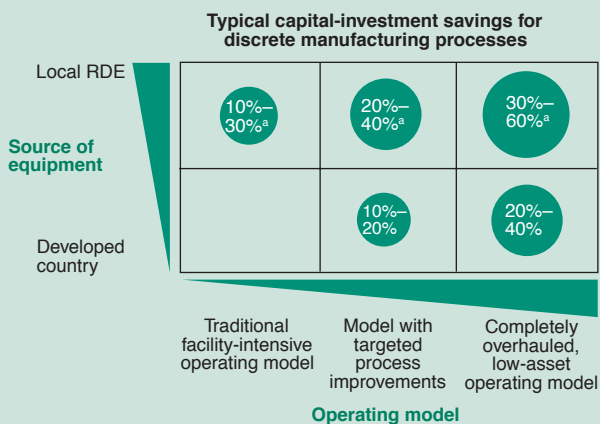
In addition to redesigning facilities, processes, and value chains, operations in RDEs offer opportunities to redesign products themselves—often specifically for manufacturability in RDEs. As part of its Chinese manufacturing program, a major electronics-equipment manufacturer decided to redesign one of its product lines, replacing several injection-molded plastic components with metal stampings. The stampings were significantly more labor intensive but also less capital intensive—a good match with the operating economics of the company’s new Chinese plant.

Combining the lower-asset operating model with the savings from local plant infrastructure, machinery, and equipment can generate major overall investment savings—up to 60 percent for an aggressive implementation making use of all available levers. (See Exhibit 2.)

RDE-based business models often permit higher capital productivity. A six-day (Monday to Saturday) workweek is standard in many RDEs, and a 20 percent premium above normal pay is a sufficient incentive for many workers to work on Sundays and public holidays as well. Theoretically, the 24/7 model gives companies the ability to operate 8,760 hours a year—about 40 percent more than the typical five-day, three-shift weekly model and about 110 percent more than the five-day, two-shift weekly model.

Of course, to gain the full benefit of extended operating hours, plants in RDEs need to achieve the same (or better) performance levels for machine uptime and product changeovers as their counterparts in developed markets. Keeping utilization high requires operational excellence not only in areas such as maintenance and production setup but also in sales and production planning, which are crucial to ensuring that the pipeline is filled with sufficient volumes to make use of all that capacity.

Exhibit 2. Companies Can Save up to 60 Percent on Capital Investments in RDEs



SOURCES: BCG case experience; market interviews; press search; BCG analysis.

NOTE: Each bubble represents the typical savings in an RDE compared with a greenfield installation in a developed country.

^aEstimates assume that 50 percent of the equipment is sourced from the local RDE.

The Substantial Benefits of the RDE-Based Capital Advantage

A manufacturing strategy that effectively leverages a lower-asset, RDE-based facility can generate substantial short- and long-term benefits. These include not only financial benefits, such as higher returns on the investment, lower investment hurdles, and lower fixed costs and breakeven points, but also strategic and operating benefits, including lower minimum scale, greater flexibility, and simplified risk management.

Higher Returns on the Investment. Let's take an example. For a typical manufacturing project that generates a 15 percent return on capital, downsizing

fixed assets by 30 percent—an amount that should be achievable in many RDE-based projects following the lower-asset model—while adding, at most, incremental costs (mainly for additional labor) would boost the return on capital by four percentage points. (This analysis assumes that 70 percent of the original capital base was in fixed assets and the remaining 30 percent in working capital, which does not change.) Such an improvement can create a substantial change in project attractiveness. In addition, the initial investment can be recouped faster, reducing overall risk.

Lower Investment Hurdles. In many cases, RDE projects that originally failed to clear a company's hurdle rate suddenly become feasible when recast in terms of the lower-asset model.

Lower Fixed Costs and Breakeven Points. With fewer fixed assets sitting on a company's balance sheet, the amount of depreciation drops. Although additional labor costs can sometimes be as high as, or even higher than, the savings on depreciation, companies can generally manage labor more flexibly than depreciation—an important advantage when responding to economic ups and downs and fluctuations in production. In several cases, we have seen the operating-profit breakeven point drop by as much as ten percentage points.

Lower Minimum Scale. In many cases, the lower-asset approach allows companies to reduce their minimum-scale requirements by half—or even more. And lower minimum scale offers strategic advantages. Not only can companies diversify operating risk across more locations without sacrificing cost position, they can also have more specialized plants. These, in turn, tend to create steeper learning curves for workers, higher product quality, and better financials than many multipurpose facilities. Fewer scale hurdles also

mean lower entry barriers into new lines of business and faster start-up of new operations.

Greater Flexibility. Lower-asset facilities create all sorts of opportunities to implement more effective processes. In one case, a chemical company gained substantial operating flexibility in an RDE by installing three small, manually operated reactors that offered smaller batches and greater variety at lower cost compared with the single large, fully automated reactor the company would have used in a developed country. A setup with less machinery also lends itself to faster adoption of new products and processes, faster adjustment of manufacturing flow paths to the next generation of products, insertion of special orders between standard production runs, and experimentation.

Simplified Risk Management. Having plants with less on-the-ground investment mitigates risk in numerous ways. There is a lower risk of asset obsolescence and less exposure of brick-and-mortar investment to expropriation, natural disasters, and other force majeure events, and there are fewer exit barriers if the facility needs to be closed down. Lower-asset facilities also offer the opportunity to diversify risk across multiple operating sites and regions where it would otherwise be uneconomical to operate profitably.

Implications for Operations and Organization

To leverage all the opportunities available in RDEs, companies must reinvent their investment models, operating formulas, and overall management philosophies. They need to change along several dimensions.

New Rules for Setting Up Operations. Plant engineers and production planners will need to adopt new per-

spectives and depart from established routines: going back decades to concepts and blueprints that predate automation; considering new equipment suppliers; giving engineers clear directions to avoid overengineering; leveraging RDE-based engineering talent to design products and processes for maximum capital productivity (many RDE-based engineers have a lot of experience executing projects under extreme resource constraints); and systematically negotiating with host governments for maximum incentives.

More Holistic Evaluation of Investment Options.

Companies analyzing RDE-based investments must be able to model a substantially wider range of implementation options. To evaluate these options quickly—making the right cost and investment assumptions over an extended period—companies will require better data on the need for, and cost of, specific equipment, some of which will be available only locally. They will also need investment analysis tools for comparing a broader range of implementation options, and hands-on capabilities for assessing what is feasible on the ground.

Best-in-Class Work-Force Management. Effective management of the work force is particularly important in RDEs, where operations are often two to three times more labor intensive than in developed countries—and where labor markets can be tight and workers are willing to switch jobs for incrementally higher pay. Critical tasks include keeping staff retention high while actively managing total labor costs, as well as training workers in best practices and helping them move up the learning curve.

New Approaches to Quality Control. Having more labor involved in the process and more hand-to-hand interfaces between discrete production steps will require new approaches to quality control. Com-

panies will need more quality “gates” staffed by highly skilled and experienced people and supported by modern in-process quality metrology, as well as a quality culture in which workers are aware of the expected quality standards and know what constitutes a deviation from them.

* * *

Offshoring to RDEs provides an opportunity for companies to make structural adjustments to their asset bases, creating lean, flexible plants that deploy low-cost infrastructure, machinery, and equipment and generate products and processes redesigned for more labor content and less capital. Savvy companies can leverage these new plants to achieve a significant edge over competitors stuck in traditional locations with heavy capital investments. The opportunity—and the challenge—are to fully exploit the new economics of global advantage: lower costs and higher returns on capital.

Jim Hemerling
Thomas Bradtke

Jim Hemerling is a senior vice president and director in the Shanghai office of The Boston Consulting Group. Thomas Bradtke is a manager in the firm’s Boston office.

You may contact the authors by e-mail at:

hemerling.jim@bcg.com

bradtke.thomas@bcg.com

This article is cosponsored by BCG’s Operations and Industrial Goods practice areas.

To receive future publications in electronic form about this topic or others, please visit our subscription Web site at www.bcg.com/subscribe.

© The Boston Consulting Group, Inc. 2005. All rights reserved.

THE BOSTON CONSULTING GROUP

Amsterdam	Houston	Rome
Athens	Jakarta	San Francisco
Atlanta	Kuala Lumpur	Santiago
Auckland	Lisbon	São Paulo
Bangkok	London	Seoul
Barcelona	Los Angeles	Shanghai
Beijing	Madrid	Singapore
Berlin	Melbourne	Stockholm
Boston	Mexico City	Stuttgart
Brussels	Miami	Sydney
Budapest	Milan	Taipei
Buenos Aires	Monterrey	Tokyo
Chicago	Moscow	Toronto
Cologne	Mumbai	Vienna
Copenhagen	Munich	Warsaw
Dallas	Nagoya	Washington
Düsseldorf	New Delhi	Zürich
Frankfurt	New York	
Hamburg	Oslo	
Helsinki	Paris	
Hong Kong	Prague	

BCG

www.bcg.com

7/05

