Striking a Balance Between Machine Performance & Value

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INTRODUCTION

In manufacturing, being the best isn't enough for business success. Shops must constantly improve to stay ahead of the competition, acquiring new technology and mastering its use as quickly as possible to maximize profitability. With better machine monitoring data and more equipment to choose from than ever before, however, making capital purchasing decisions has become increasingly complicated.

Many shop owners and decision-makers prefer to simplify the machine tool acquisition process by always prioritizing value – but doing so often comes at the cost of performance. For the highest return on investment (ROI), it is important to find a balance between performance and value. While this initially seems more daunting than comparing sticker prices, minimizing lifetime equipment costs makes it significantly easier to keep up with technological advancement and grow business.

Mazak

PERFORMANCE VS. VALUE

The use of "performance" and "value" serves as shorthand for all of the factors that make up a given machine; it should not be treated as a spectrum with value at one end and performance at the other. Shops must consider all of the different kinds of "performance," from equipment that has been designed for extremely specialized tasks to exceptionally versatile machines that prioritize flexibility over optimization. Likewise, "value" is more than a number on a price tag, since today's high-value or commodity-type machines can be more expensive in the long term.

Most of the time, a shop's size will also dictate what factors are most important – and how much time they can spend on the decision-making process. Smaller shops, for instance, often need to evaluate the external factors of a purchasing decision, such as what a machine tool OEM includes with machine purchases or how these OEMs can support shops' operations. A more expensive machine, on the other hand, may be more than worth the price when it is accompanied by a service and training package that gives smaller shops access to global expertise and application support.

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As a shop grows in size, it has more resources to dedicate to process analysis and decision-making. Frequently, these shops have already invested in machine monitoring equipment or other connectivity solutions that allow them to make precise purchasing decisions based on their unique needs. The largest manufacturers usually have the capability to know exactly what types of machines they need, and they'll look for OEM partners that can supply and support that solution, even when it is highly customized.

TOTAL COST OF OWNERSHIP

Regardless of a shop's size, however, an important factor that must be considered is the total cost of ownership of a machine. The more information that can be gathered about costs associated with a machine, the easier it will be to make an informed decision. For example, it is usually easy to estimate future service costs based on an OEM's scheduled maintenance programs. As the size of the purchase increases,

adding even more context can be valuable to maximize ROI, such as comparing the costs of educational opportunities or application support provided by various OEMs. These analyses should also include projected risks, as machines that cannot provide sufficient process security will always end up costing much more as parts are scrapped in the future.

Effective OEMs like Mazak strive to reduce the total cost of ownership for their machines by offering a comprehensive support package. Mazak customers receive three years of free training through the company's Progressive Learning program with the purchase of every machine. Spare parts and rebuilt spindles are much more accessible thanks to the company's centrally located Kentucky headquarters, while an expansive field service program and a network of Technology and Technical Centers across North America make it easy to access Mazak expertise wherever shops are.

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PER-PART COSTS

As the volume of operations grows, so too does the importance of per-part costs. High-volume manufacturing remains the norm in many industries, and for the largest of these manufacturers, shaving fractions of a second from a part's cycle time can mean thousands of dollars in savings a year. These shops also tend to be the manufacturers with the resources to spend on making informed decisions – finding the ideal balance between performance and value is much easier when a shop can factor in everything from energy consumption to coolant evaporation.

Luckily, OEMs like Mazak can leverage their extensive experience with these major companies to make it possible for much smaller shops to understand their per-part costs at a very granular level. Furthermore, no matter how a shop arrives at their per-part cost, finding the most effective solution for optimizing a given process is much easier with machine tool builders that have expansive catalogs. With machine tools at most price points and a comprehensive range of features, Mazak can help these shops get as close to the ideal balance between value and performance as possible.

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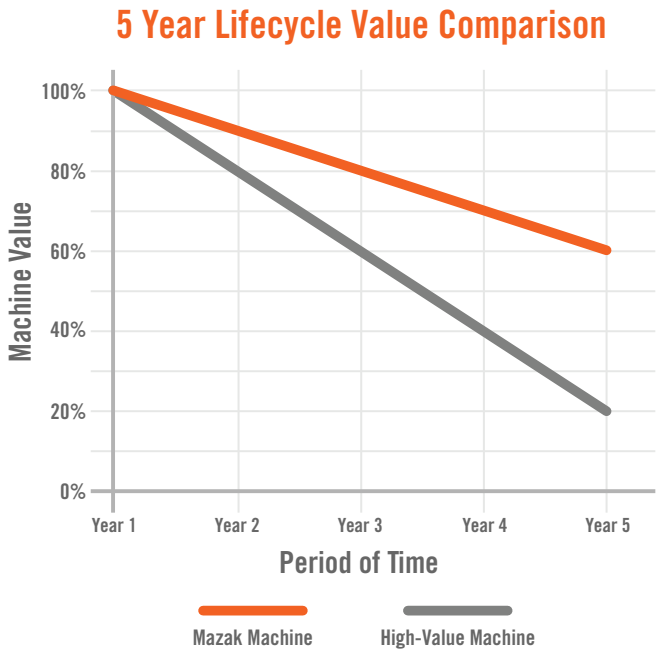
TOTAL LIFECYCLE COSTS

For most shops, truly maximizing ROI requires going beyond looking at the total cost of ownership and considering the costs over the entire lifecycle of a machine – including its resale value. After all, most manufacturers who purchase new machines do so with the expectation that they can help fund the next round of capital purchases by selling the old equipment. From this perspective, it's vital to look at such things as how quickly machines wear out, or how much aftermarket support is available for these machines.

The total lifecycle costs can completely transform how shops consider machine purchases. For example, a high-value machine may cost $60,000 over a typical five-year repayment schedule. At the end of this period, however, the machine can be sold for only $12,000, meaning the total lifecycle cost was $48,000. A more expensive $100,000 machine from a manufacturer like Mazak, on the other hand, may be so well-supported and durable that it can sell for $60,000 after five years. While the initial investment is higher, over the five-year period of ownership, the total lifecycle cost is lower at $40,000. And when shops include the faster cycle times, greater throughput and higher durability of the Mazak solution – as well as the company's long history of business stability, technological leadership and customer support – those costs often go down even further.



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CAPABILITIES & CAPACITY

Given that minimizing total lifecycle costs is key to maximizing ROI, many shops choose to create purchasing plans with a schedule for upgrading capital equipment. This routinization also ensures that shops always have equipment that meets their current technological needs and requires little more than planned maintenance for excellent reliability. For these reasons, a good rule of thumb is to replace roughly 10% of capital equipment on an annual basis to maintain competitiveness, selling the used machines to fund new acquisitions.

In many respects, adding capabilities to a shop tends to add to its overall capacity as well. For example, many shops are replacing their single-purpose mills and lathes with Multi-Tasking equipment, which provide exceptional flexibility. A Mazak machine capable of DONE IN ONE® operations can significantly improve throughput and accuracy, particularly in high-mix/low-volume production environments where job changeovers occur frequently. This level of flexibility is expanding even further with Mazak HYBRID Multi-Tasking, which is creating new time savings and cost efficiencies across numerous industries by incorporating new additive and joining technologies as well as advanced software-driven solutions for manufacturing complex parts like gears.

SUMMARY

No matter a shop's size or the industry in which it works, capital purchases involve making numerous hard decisions – and for the highest possible ROI, shops cannot afford to ignore the many factors that go into the final costs of the machines they're considering purchasing. By partnering with effective OEMs like Mazak, shops can easily find equipment that suits their needs, both in terms of effective machining today and the residual value the machine will have in the future. This approach ensures shops can achieve sustainable profits at the same time they future-proof their facilities through continuous improvement.

About Mazak

Mazak Corporation is a leader in the design and manufacture of productive machine tool solutions. Committed to being a partner to customers with innovative technology, its world-class facility in Florence, Kentucky, produces over 100 models of turning centers, Multi-Tasking machines and vertical machining centers, including 5-axis models. Continuously investing in manufacturing technology allows the Mazak iSMART™ Factory in Kentucky to be the most advanced and efficient in the industry, providing high-quality and reliable products. Mazak maintains eight Technology Centers across North America to provide local hands-on applications, service and sales support to customers.