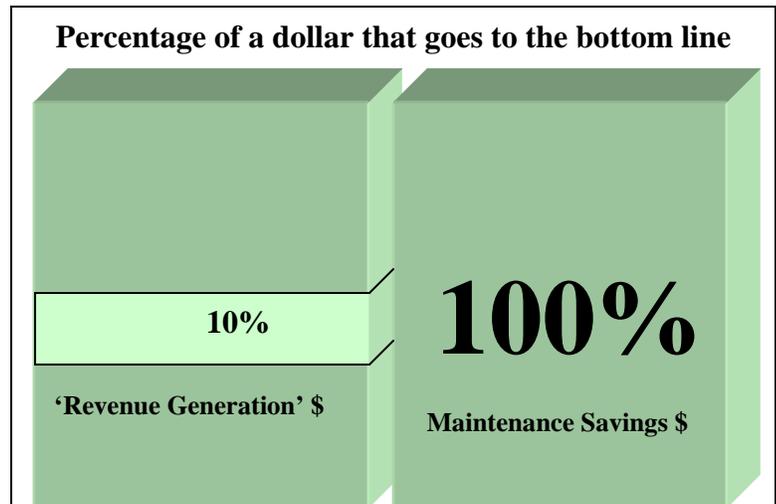


In most businesses, only ten cents out of each *revenue dollar* go to the bottom line. When a dollar is saved on machine maintenance, however, that *entire saved dollar* goes to the bottom line. Unfortunately, the inverse is true also (when a dollar is **lost** on machine maintenance, that entire dollar *will come directly out of* the bottom line).

It is apparent that just a little more effort in the **cost-saving** area will produce ten times more results than in the **revenue generation** area, when you talk from the bottom line point of view.



If it is ten times faster, then, to get **repair cost reductions** to the bottom line than to get **more income** to the bottom line, **what can a mere one percent machine improvement do to the bottom line?**

Let's analyze a typical three-shift Nevada gold mining operation with an ore body that has .174 ounces of gold per ton. An off-road truck with a 150-ton capacity is hauling 26 ounces of gold per trip. Twenty-six ounces multiplied by \$440 per ounce is \$11,440 per haul trip. Multiplied by 9 trips per hour is \$102,960 per hour. Multiplied by almost 20 hours per day is \$2,059,200. That kind of machine deserves a top-priority maintenance program.

For that reason, mines perform extremely thorough comparisons that take factors such as availability into account (and so should any machine owner). The point is this: adding just a single percentile of improvement in one of these 150-ton haulers's **availability-per-year** yields a tremendous amount of revenue straight to their bottom line. In fact, thousands of equipment investment analyses have shown that this single percentile of improved availability increases that truck's bottom line between 1.7% and 3.5%. Now, multiply that figure times the number of large haulers in their fleet, and you have a good idea of the true value found in a single percentile of overhead improvement.

Here are **three other factors** that affect machine bottom lines. Next to each one is the typical **parameter of bottom line improvement** when that factor is improved by one percent.

- 1% **Productivity** / 2.5 to 4.5% Bottom Line Boost
- 1% **Utilization** / 1.7 to 3.5% Bottom Line Boost
- 1% **Operating Cost** / 1.5 to 3.5% Bottom Line Boost

For example, what if you could help the mine mentioned earlier achieve just one more 150-ton truck trip per day. That would mean they could yield 26 gold ounces more per day per truck. That would be 8,840 ounces per 340-day work year (they work on weekends also). Multiply those ounces by \$440 per ounce and the mine can generate **an additional \$3,889,600 in gross revenues with a single haul truck.**

According to the DOE, **62.4% of energy is lost to friction in the engine** resulting in poor mileage, reduced horsepower, and excessive component wear. The DOE also confirms that the greatest friction occurs by particles the same size as the oil film thickness. The majority of such destructive particle contamination comes not from outside the engine, but, rather, from the engine's internal contact surfaces themselves – the particulate matter is in the form of asperities that when rubbed together, grind off to form its own contamination. Proactive maintenance (not predictive or preventive maintenance) is quickly being recognized worldwide as the single most important means of achieving savings unsurpassed by conventional maintenance techniques.

Now, consider the implications of **numerous factors** being affected because machine engines get: improved horsepower throughout their lives, fewer oil changes, reduced component wear with the resultant fluid leaks, reduced overheating, reduced corrosion, reduced smoke, 50% reduction in carbon monoxide emissions, .8% improvement in O2 output, fewer before-failure maintenance sessions, and improved miles-per-gallon. The *Product Development and Manufacturing Center's* (PDMC) testing on a 250-truck fleet concluded that the integration of **MotorSilk** realized about a \$860,000 annual savings (\$3,440 per truck – these results are consistent with other fleets from PDM testing). What percent of that \$860,000 went directly to the bottom line? 100%!

The potential and scope of 1% suddenly takes on new meaning with a proactive maintenance attack upon friction.