

The Repair or Replace Worksheet (v5)

by Jason Maxham (<https://artoftroubleshooting.com/>)

Purpose: when something breaks, deciding between repairing or replacing can be difficult. This worksheet aims to clarify your needs and give you a framework for evaluating the two options side-by-side.

How to use this worksheet: fill in the colored boxes with details about your particular situation. The color-coded scheme will help you get the numbers in the right place for the value-added calculation. This worksheet is divided into 9 sections, each covering an important aspect of the repair or replace dilemma. By the time you come to the end, you'll have some good information with which to make an intelligent decision.

1. The Broken Machine

Make	
Model	
	Date
Acquired	
Broken	

Description of the problem:

2. Your Needs, Past and Present

Originally, why did you acquire this machine? Have those needs changed? Before it broke down, was the machine still useful? If your needs have changed substantially, would you be better off doing nothing (i.e., **neither** repairing nor replacing)?

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3. Salvage Value

We need to understand what the item is worth in its current state. Many broken items have little or no residual value, while others can be readily sold for parts or scrap. Try to determine this amount, called the **salvage value**, with the understanding that it can be **negative** if a disposal cost is required.

Salvage Value ($\text{machine}_{\text{salvage}}$):

4. Estimates For Repair

Getting multiple estimates for a repair has both advantages and disadvantages:

On the plus side, they can give you information on “fair” pricing and help you avoid getting ripped off. When negotiating, multiple estimates may give you a bargaining chip to possibly obtain a better deal. Finally, because people approach problems differently, they can expose you to a wider variety of repair options. These often lie along a spectrum of long-lasting (usually relatively expensive) to short-term (typically relatively inexpensive).

On the downside, the time and effort needed to gather all this information has its own cost. For relatively inexpensive items, one estimate may suffice. For more costly repairs, three may not be enough!

Repair Estimates

	Company/Person	Cost	Timeframe	Reputation/References	Notes
#1					
#2					
#3					

If I were to pursue repair, I'd choose #1 / #2 / #3 at a cost of
($\text{repair}_{\text{cost}}$)

5. The Value-added Repair Calculation

For many consumers, the ability to recover money spent on a repair when reselling is an important consideration. To make this prediction (keeping in mind that the future is uncertain), we first need to estimate what the item will be worth **after a successful repair is made**. Figuring this out may require some research, but it's an important data point.

“Repair or replace?” is a choice among many alternatives: determining the post-repair value will open your eyes to possibilities available in the marketplace. Should you decide to resell in the future, this information is

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useful because it will give you the perspective of potential buyers. If you have any delusions about how much your fixed item will be worth to others, they can be dispelled with the research done in this step.

Estimated Market Value After Repair ($\text{machine}_{\text{post-repair}}$):

Now, we can try forecasting the extent to which repair will add market value to the machine:

$\text{machine}_{\text{post-repair}}$	—	$\text{machine}_{\text{salvage}}$	=	$\text{repair}_{\text{value-added}}$
	—		=	

Let's make one more important calculation by comparing the added market value to the repair cost itself:

$\text{repair}_{\text{value-added}}$	—	$\text{repair}_{\text{cost}}$	=	Gain/Loss
	—		=	

A **positive** number in the “Gain/Loss” column means that the market value of the machine is anticipated to increase by more than the cost of the repair. This is an economically beneficial fix, and means the resources you spend on repair will likely be recouped if you decide to resell.

A **negative** number means that the cost of the repair is predicted to **not** increase the market value of the machine by an equal amount. This theoretical loss means your repair spending is unlikely to be recaptured if you decide to resell. More importantly, **this also implies that replacement will be cheaper.** That’s because the market value of an equivalent working machine, minus the proceeds from selling the broken one, is also an estimate of the replacement cost to you!

Please note this predictive calculation is only as good as your underlying research and reliable market information, needed to estimate the salvage and post-repair values, may be difficult to obtain. Repairing with the intent to resell makes you a *de facto* entrepreneur and subject to unforeseen future events: will you be able to find buyers willing to pay the price you desire when you need them?

One final point: the result of this calculation is not the last word. These equations don't measure how much a repair is personally worth to you, nor do they account for the many unique constraints and alternatives present in your particular situation. Section #8 invites you to consider the more qualitative aspects of a machine’s purpose and context, which are often the most important parts of a repair or replace decision.

6. Repair It Yourself?

If you have the skill or desire to learn, consider repairing the item yourself (if not, skip this part). In addition to the soul-stirring satisfaction of being able to solve your own problems, it's also a chance to expand your capabilities. There's also the possibility to reuse tools and knowledge in future fixes. But before you pick up a wrench or hammer, think about the opportunity costs and risks of a do-it-yourself (DIY) repair project.

What is my time worth? Could I be doing something more valuable?

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DIY Repair: Requirements, Challenges & Risks

Problem discovery:
how will I figure out
what is wrong?

Do I have the know-
how and skill to
properly execute
the fix?

Tools Required

Parts Needed

7. Replace

Seek out possibilities for replacement. Consider both used and new options:

Option	Make/Model	Condition	Cost	Source
#1				
#2				
#3				

8. Factors To Compare

This section will help you compare some important dimensions of “repair or replace” side-by-side. Often, just one or two of these aspects will emerge as the most critical, but *which* few is highly contextual, differing widely based on your situation.

The following is a list of common make-or-break factors, with separate columns to compare repair with used and new replacements:

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Factor To Compare	Replace With Used	Replace With New	Repair
Features: evaluate the machine's capabilities with respect to your needs (speed, capacity, etc.).			
Reliability			
Installation Costs: fixing or acquiring a machine is just the first step. Putting it in the right place often takes further effort and expense.			
Configuration/Tuning: identify any preparations required to make the machine useful.			
Break-in Period: initial operation may be limited and impact your workflow.			
Consumables: use of fuel, ink, electricity, etc. can vary. Note differences.			
Compatibility: the ability to integrate the machine within the context of your other systems.			
Timeframe: how long will it take to fulfill each option?			
Warranty Protection			
Future Maintenance Costs			
Repair Ecosystem: availability of parts and know-how, maintenance training required, etc.			
Protection From Obsolescence: the future may change your needs, but can the machine adapt?			
Health/Safety			
Emotional: good or bad feelings about your options.			

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9. Making A Decision

All the things inventoried in this worksheet will not weigh equally on your decision. Make a short list of the factors you think are the **most important**:



This is my decision and the reason(s) why:



Follow-up (reflections on the decision afterwards):



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