

4 Critical Considerations for Controlling Your Touch Screen Costs

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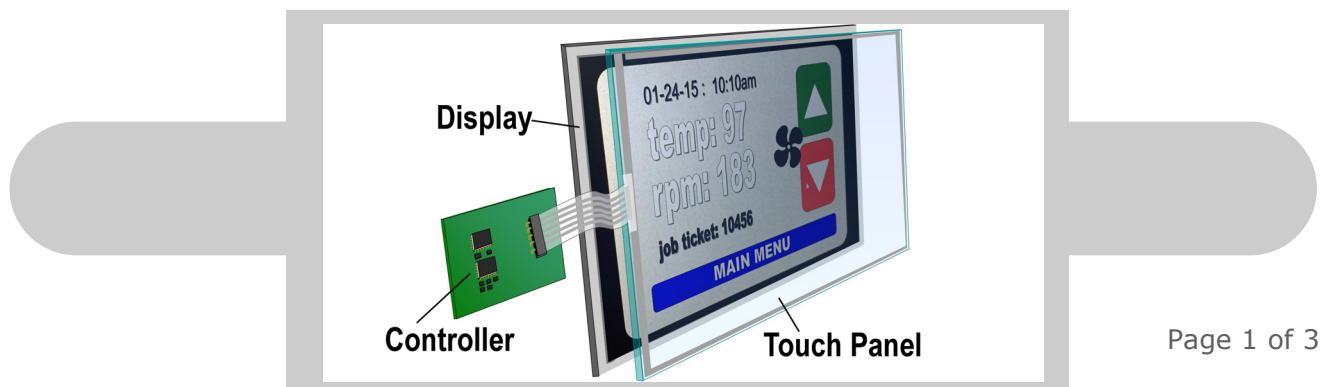
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When explaining the various interface options to engineers and product designers, they often want to discuss the possibilities of integrating touch screen technology. These conversations typically don't last too long before they make the inevitable remark: "I like this technology, but how much does it cost?" Not only is this a fair question, but it's an extremely important one, as well. Even the most cutting edge of technology isn't useful if a product's cost model won't support it.

I have identified 4 key areas that if considered during the design phase can help minimize the cost of integrating touch screens, and in the end make them more viable for a larger amount of product offerings.

Before I get into these considerations, a quick review of the various components of a touch screen system is warranted. For the sake of this discussion, I am defining a touch screen system to be made up of 3 components: the display, the touch panel and the controller. Often there can be additional material requirements related to touch screen integration, such as bezels and/or frames, but this conversation does not factor in these variables.



1) Start with the Display

We have found that of the components that make up a touch screen system, the one that typically has the most cost volatility is the display. Whether it's a TFT, LCD or OLED the cost of the display can vary widely depending on both performance specifications and the availability of the product. Likewise, both the capabilities and aesthetics of the display are often the most scrutinized part of the touch screen system and thus offers the most logical starting point for this design endeavor. Moreover, the display itself often makes up between 50%-70% of the overall cost of the touch screen module so making the right choice in this area is critical to properly manage the eventual cost of integrating this technology.

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2) Lean Towards Standardization

While customization in both touch panels and displays is getting more economical in lower volumes, we always try to steer our customers towards using standardized sizes. Simply put, the more standard the product, the less volatile the pricing. This is particularly true for projects where the production volumes are likely to start out small and grow relatively slowly. The good news is that there is a plethora of standard sizes available so most product designers don't feel restricted by this recommendation. In terms of budget concerns, the area that is most impacted by customization is in one-time engineering and tooling costs.

Cost Premium of Custom over Standard

	QUANTITIES: > 500 pcs.
Unit Cost	5%-10% (approx.)
OTEC (display & touch panel)	\$5,000-\$10,000

3) Size Matters

While this consideration is likely obvious among most designers, it is important to note that just like consumer products, the size of touch screen assemblies can get costly in larger formats. In certain formats, this cost curve can exceed linear proportions. This concern may be a little more dramatic with displays versus the touch panel but nevertheless is an important element to consider.

How Size Impacts Cost

5 wire resistive touch screen system

	Size: 7"	Size: 12.1"
Touch Panel Cost	\$15.00	\$34.00
Display Cost (Rough Estimate)	\$50.00	\$200.00
Controller Cost	\$10.00	\$10.00

4)Technology is not Free

Within the touch screen universe, there are two reigning technologies: Resistance (5-wire) and Capacitive (Projected Capacitive). Resistance touch panels were the first technology to become popular while capacitance technology has experienced tremendous growth in the last 5 years thanks to it's incorporation into most smart phones and tablets. While it may be enticing to jump on board this movement towards capacitive touch panels, this technology comes at a cost premium. In fact, there is a premium in both the touch panel as well as the controller for capacitive technology. In the end, the application and projected user model will likely dictate the route of the technology. Luckily, many applications and markets firmly embrace the less expensive technology. As an example, if you sit at the steering wheel of some of the most luxurious automobiles in the world and view their electronics package, there's a great likelihood that they are utilizing resistance technology.

5-wire Resistive Cost vs. Projected Capacitive Cost

Size: 10.4"

	Resistive	Capacitive
Touch Panel Cost	\$30	\$45
Display Cost	No Difference	No Difference
Controller Cost	\$10	\$30

By now, the future of touch screens is no longer in question. In short, this technology provides an intuitive interface that cannot be matched by other input options. Just as importantly, a very broad range of the population is now comfortable with the technology making user acceptance and adoption nearly a certainty. Moreover, as touch screen technology has improved, many of the once concerns over reliability are no longer present. Instead of spending resources qualifying the technology, engineers can now focus their early design efforts more to justifying the economics . If product developers weigh the critical cost considerations, there will be a much greater likelihood that they can find an acceptable cost model to justify integrating touch screen technology into the products they design.



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