



10 DESIGN MISTAKES THAT DRIVE UP PRODUCT COST



MISTAKE #1

Over-Engineering the Design

- ☞ Does the design include only essential features?
- ☞ Have you avoided high-cost features (e.g. wireless charging) unless truly necessary?
- ☞ Is the microcontroller right-sized for the application?

MISTAKE #2

Overly Expensive PCB Design

- ☞ Is the PCB size optimized (not too large or too small)?
- ☞ Are you avoiding extra layers, blind/buried vias, or flex PCBs unless required?
- ☞ Are all components SMT where possible for simplified assembly?

MISTAKE #3

Over-Specified Components

- ☞ Are all components matched to actual performance requirements?
- ☞ Have you avoided 10x safety margins unless critical?
- ☞ Have you reviewed cheaper alternatives for common parts?

MISTAKE #4

Custom Parts Too Early

- ☞ Are you using off-the-shelf components wherever possible?
- ☞ Have you delayed custom designs (batteries, chips, etc.) until volumes justify?
- ☞ Have you considered certification and lead time implications of custom parts?

MISTAKE #5

Overly Complex or Unnecessary Display

- ☞ Is a display truly necessary, or can a smartphone app handle UI?
- ☞ Is the display size, type, and resolution justified by the use case?
- ☞ Have you considered the downstream cost (power, processor, GUI) of using a display?

MISTAKE #6

Using Brand-Name Parts Without Need

- ☞ Are you reserving premium brands for critical parts only?
- ☞ Have you evaluated reputable low-cost or generic alternatives?
- ☞ Have alternatives been tested or second-sourced?

MISTAKE #7

Not Designing for Manufacturability (DFM)

- ☞ Is the design optimized for efficient production and assembly?
- ☞ Are there any features that could cause slowdowns or defects on the line?
- ☞ Have you reviewed DFM guidelines before finalizing the design?

MISTAKE #8

Unnecessary Mechanical Complexity

- ☞ Is the enclosure as simple as possible (e.g., 2-piece design)?
- ☞ Have you avoided advanced mold features (side actions, sliders) where not needed?
- ☞ Are fasteners minimized and chosen for ease of assembly?

MISTAKE #9

Skipping Manufacturing Cost Estimates Early

- ☞ Have you obtained early cost estimates (PCBs, components, tooling)?
- ☞ Are BOM, assembly, and packaging costs tracked from the start?
- ☞ Are you validating assumptions about retail price vs. build cost?

MISTAKE #10

Skipping Manufacturing Cost Estimates Early

- ☞ Is the design power-optimized at both hardware and firmware levels?
- ☞ Are you using low-power components and efficient sleep modes?
- ☞ Can smaller batteries or regulators be used due to better power management?

For Entrepreneurs and Startups:

Develop and launch your electronic product **FASTER** without costly mistakes!

Doing it alone is slow and risky. Small missteps now can become big problems later. Skip the mistakes and launch faster.

→ Frustrated things aren't moving as fast as you want?

Feeling unsure what to do next? ←

Meet your guide: John Teel



Hey there, I'm a former microchip design engineer at Texas Instruments and founder of a hardware startup that sold products in hundreds of retail stores. My chip designs are in devices from Apple, Intel, and more.

Now, my full-time focus is helping people like you bring new electronic products to life, without wasting time, money, or risking everything.

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