

Writing a Short Memo

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Abstract—I explain why a memo should contain sections on Who, Why, How, What, and When.

I. WHO

The reader is the *Who*, and I think it's a good idea to explain what you want from the reader. *"I'm writing this memo because I would like us all to write better memos"*. Think of the reader when you write. Unless you're writing fiction, there is no need to surprise the reader with twists and turns. Information should be clear, concise, and brief. Leveraging lofty adverbs to pontificate your pathosque, supreme, very unique rhetorical skills just makes the reader confused, and me sound like a pompous ass. And "very unique" doesn't exist, it's either unique, or not.

II. WHY

He who has a why to live can bear almost any how – Nietzsche.

Too often we jump to the *How* and *What* before we explain the *Why*. Allow me to borrow an example from circuit design: *"I need you to design a single ended, fast, analog-to-digital converter with 12-bit resolution and rail-to-rail input swing"*. Those that work for you might do as you say without question, but too often, the result is not what you really need, because you forgot to explain the *Why*. *"I need to measure a Wheatstone bridge [?]. I'll measure the voltage on one side, and then the other, quite fast, so the samples occur at the same timeish. Then, I can take the difference in digital. The signal between the two sides is small, 10 mV, but the signal on each side can change from rail-to-rail, so I need really high-resolution analog-to-digital converter"*. The *Why* allows the reader to question the *How* or *What*. Solving the *Why* is the important thing. Explain the *Why* (measuring Wheatstone bridge), and then the *What* (single ended, fast, high-resolution, analog-to-digital converter). I could then say: *"The proposed solution is stupid. It's much easier to measure differentially across the Wheatstone bridge with a differential slow analog-to-digital converter. Also, since the differential signal is small, we don't need high-resolution analog-to-digital converter, just a decent common mode range"*. Maybe I'd replace stupid by a more appropriate term, like "an interesting idea". *Why* is important, to get the right *How* and *What*.

III. HOW

The *How* can be process, money, resources, tools, everything you need to do the *What*. In the circuit example the *How* could be: *"I need a test chip in Q1 next year for the first iteration of the analog-to-digital converter, then, about x months later, we can do the product tapeout"*.

IV. WHAT

A proposed solution to fix the *Why*. The *What* can give options, or indeed be a single solution. It is important, however, that the *What* flows naturally from the *Why*. Expect the *What* to be challenged. That's the point, we want to find the best *What*.

V. WHEN

Either, "if we start now, when can we complete the *What*". Or, "we need the *What* to be complete by 2021-10-11, what must we do today to get there"? Often, it's hard to see when the *What* (become a multi planetary species) to a *Why* (life could end on earth) can happen, however, one can setup an early milestone (develop vertical landing with a rocket) that must be completed on the way. Once the first milestone is complete, then proceed to the next, and continue until complete.

VI. WRITING

A memo is a serious text, it has a purpose. Maybe to reach a decision, provide common background information, or spark a discussion. I believe that we should strive to make memos well written. I do not claim to be a reference on writing well, for that I refer to William Zinsser's book "On Writing Well" [?].

VII. CONCLUSION

A memo should contain Who, Why, How, What, and When.

REFERENCES

- [1] Wikipedia, "Wheatstone Bridge", online: https://en.wikipedia.org/wiki/Wheatstone_bridge
- [2] William Zinsser, "On Writing Well", online: <https://www.amazon.com/Writing-Well-Classic-Guide-Nonfiction/dp/0060891548>