

Five Must-Ask Questions for Successful 5G Design

Design teams involved with 5G technology must bear much in mind in order to obtain a winning formula.

You are leading a team to go after this 5G business. Your organization's strategic imperatives include leadership in 5G and you are an essential part of making that real. Your management, your team, your C-suite, and your board of directors are counting on you. No pressure. You embark on this initiative, you have your team intact, it is time to draw battle plans and start the assault. But is your team ready? Do they have Tom Wolfe's "Right Stuff" to realize that vision of 5G dominance?

After 32 years in the high-tech world, most of which I spent in engineering management roles, I have found that the team I am managing often has more insight into the success factors, enablers, roadblocks, and landmines on the road ahead. I suggest you check in with them and see where their heads are. If you are two years into your effort, it's not too late—have a chat with your team and find out:

1. DO YOU HAVE THE RIGHT BACKGROUND AND EXPERTISE?

I recall once having to make the unpopular decision for my team to standardize on a single programming language. Once I made that call I realized that everyone not only had to learn the language, but also had to become proficient object-oriented programmers—a rarity at that time. It was still the right decision, but the implementation time was greater than originally expected.

5G means new technologies for many of us. This might mean designing for carrier frequencies and bandwidths that are not familiar ground to your engineers. It might mean antenna technologies with which nobody is familiar. Have you considered all the things that your team must learn or acquire? Have you considered how much will need to be acquired the hard way—by making mistakes and discovering their severity too late for anything other than a dreadful impact to your schedule or costs?

5G may mean new business models for you. This might mean your first foray into open-source software. This might mean selling services or upgrades rather than making net-30 sales. How will your design team's skills have to be adjusted in this new environment?

2. DO YOU HAVE THE RIGHT TOOLS?

Some of those new technical areas will require new tools for your team. In many cases, they will know a lot about what will make the difference. Is there new hardware? Do you need RF chambers of a different size? Do you need a new computer system focused on handling much more data quickly? Do you need EDA tools to reduce hardware turns? Which ones? And, with a nod to the expertise bullet above, does your team know how to use them efficiently and effectively?

3. ARE YOU PROPERLY CONNECTED TO YOUR KEY CUSTOMERS?

I am a fan of the agile software manifesto, especially in its commentary about putting your designers close to customers and providing rapid and frequent updates to functionality, while embracing regular and rapid changes in requirements. In an industry that is driven by consumer fad, these elements are critical not just to software development, but also hardware and business development. And without intimacy with your most important customers (the ones with, or who can influence, the most money—not the loudest ones) your ability to address needs, anticipate changes, and respond to both will be too slow for your market success.

Are you talking to the right people in your key accounts? I once watched a major project fail even though the team was working quite well with a critical customer. However, the team was getting its guidance from the wrong individuals. After significant investment, the people who were in charge stepped in and unceremoniously cancelled the entire program.

4. IS YOUR TIMING CONSISTENT WITH THEIRS?

The recipe for the most fabulously successful projects I have witnessed are probably familiar to you: your project is timed to supply your lead 2-3 customers in perfect alignment with their project timing and the overall market demand is simultaneously growing. This magical combination is, to some extent, the result of luck, but my very first boss in this high-tech world always told me that you make your own luck. What this means to me is to start with a well-prepared team, with the right tools tightly connected to their most important customers, and then make sure your schedule matches theirs.

You may argue that your strategic process needs to be honed to ensure alignment with the “market growth” ingredient in my recipe. But I also recall our CEO at Agilent, Bill Sullivan, saying more than once that “execution eats strategy for lunch.” So make sure your timing is right!

5. DO YOU HAVE THE SUPPORT YOU NEED FROM YOUR ORGANIZATION?

This is hardly unique to 5G, but we all need this reminder. I have never personally witnessed a manager leading a “strategic

imperative” who was satisfied with the support coming from the rest of the organization. I have also never witnessed true innovation in a relaxed atmosphere. Therefore, we leaders are asked to embrace these challenges.

Your team is probably keenly aware of some organizational support that will make a huge difference in their chances for success. Sometimes, getting this support is not difficult. I have been frustrated by subordinate managers in the past who, after inadequate results, have said to me, “If only we would have had A or B...” My response to them was, “Why didn’t you ask?” I am, however, embarrassed to admit having made the same mistake myself.

CONCLUSION

Talk to your team and find out what they think would make the difference. They and you will not get everything you ask for, but this process will likely clear a few roadblocks. And the innovation associated with a well-prepared, customer-connected, and motivated team will help you overcome the other challenges.