Startup War Story - Common Mistake #2

Understanding Capital Expenditures and Their Real Cost

By Bob Norton

During my first week at a company I had just joined as President, I was asked to approve the purchase of a $250,000 piece of hardware. The operations people, all from larger companies, were de-sensitized to the cost of capital and its accessibility. They wanted to buy this $250,000-piece of hardware, to be ready for the flood of customers "coming soon" The CFO had been convinced by the technical staff that the world would fall apart without this equipment and we could never serve any customers 'correctly' The logic was that they needed months to install it and we were coming out of beta testing soon. So time was running out! The reality was that they wanted the latest and greatest systems and near 0% risk for these non-existent customers and themselves personally, with little weight given to the huge cost.

In fact, the beta test was very limited and probably needed much more time, and the capacity already available, I calculated, was sufficient to handle many more customers. It would take many months to exceed the capacity that we already had. Since it would take 60-120 days to install our product, after any sale at new customers' sites, anyway the lead-time was sufficient to order this capacity as needed, only after sales were actually made.

These very bright people were falling into one of the easiest traps in startups and in life. They were acting on past experiences without adjusting their reaction to the specific circumstances at the time. They were also in a 'planning mode' as they would be at a former large company where they would avoid all risk, because of the potential high cost of mistakes to a large customer-base and their personal careers. They were assuming, there was an established distribution channel for the product, when in fact, there wasn't even a sales team in place yet or a single paying-customer in sight.

Unknown to both the operations staff (or "management team") and myself during this first week on the job, we would quickly switch from a centralized ASP model to a decentralized enterprise software model, negating the need for this hardware completely as it would be provided by the customer on site - but that's 20-20 hindsight, sort of, so lets talk about why this made no sense even without this knowledge.

The fact is, that startups must live with risk every day, manage it aggressively, and must act on a just-in-time basis with any large capital expenditure. A startup is on a rapid learning curve. It must assume a dynamic environment and hence spend large amounts of money only when absolutely needed, NOW!

So how did I manage this request from my management team?

I knew immediately this purchase would never happen, but I wanted to walk the team through the thinking process so they would understand why. It could not just be an edict from on high or their morale would be hurt and people would begin talking about the CEO's rash decisions that were endangering the company. I also wanted to begin to train this group on what being in a startup really meant. My main goal wasn't really making the decision. That was easy. It was training my management staff to make these decisions better in the near future. It was instilling in them some of my experience so they could become an effective startup management team.

The requested equipment purchase was the latest, greatest and most expensive solution they could possibly imagine. So this was not just about wanting a little more than we needed; it was about buying a battleship when we needed a speedboat. Ultimately, we had three meetings to allow the message and training to be swallowed with time and understanding.

The Meetings

At the first meeting the team explained why we needed the expensive hardware, and I asked for a "cheaper solution". There were lots of diagrams, technical terms and probably the hope that I would just say OK out of a lack of understanding. The meeting started in the late afternoon, and it was well after dinnertime before it was over. I basically sent them away to look at every possible solution again. I specifically asked them to look at both software and hardware solutions, hinting I was biased towards the former.

Often People Want To Build the B-2B
at over $14 billion each, when all you need is this F-111 general purpose fighter bomber at a cost of $18 million per plane with the right smart bombs.

GENERAL DYNAMICS F 111 AARDVARK

This fighter-bomber has a range of over 2,500 miles without re-fuelling. It has a crew of 2 and the cockpit doubles as an escape module with parachutes if the crew has to eject. The F 111 can deliver both conventional and nuclear weapons with a precision radar bombing system. It can carry 2 bombs or fuel tanks in its internal bay, and 4 others on its wing pylons. It has a max. operating altitude of just over 60,000 feet, and has a "swing wing" design. The Aardvark is currently in use with the US Air Force and the Royal Australian Air Force. Its first flight was in December 1964. It is 73 feet long, 17 feet high, and has a 63 feet wingspan. The F 111 costs $18 million dollars a plane.

At the second meeting they admitted that a solution from another hardware vendor at half the cost would probably do the same thing, but they still wanted the original vendor and configuration because the software with it was thought to be the best. However, "if we couldn't afford it," then they would manage with the $125,000 solution. At this meeting I began to design a software solution with them that would allow the same level of redundancy they were convinced we needed. I directed them to return with an estimate in man-days to implement this software solution to "delay" the purchase.

At the third meeting they admitted that the software solution could be implemented, but they did not want to admit how long this might take. I knew by this time that the layering and architecture of their software was excellent. This allowed me, leveraging my years as software architect and CTO, to know for a fact that this would be easy to implement. I suspect they did not want to admit how easy it was going to be because they still wanted this macho hardware and it would have been an embarrassing comparison.

The last meeting was very short, maybe 10-15 minutes. "We" selected the software solution, which wound up taking less than ONE MAN-DAY to implement, at a total cost of maybe $500.

Ultimately the way things evolved, this purchase would have been a total waste of money and time in several different ways. As it turned out, it was never going to be needed!

MAKING IT REAL FOR THEM

At the end of the day, I think they got it only after I took them through this example on buying a car with THEIR OWN money, as follows:

1) Our cost of capital (VC money) was expected to be about 40% per year.

2) The cost of this hardware would be 50% of what it was today in 12-18 months (Moore's law applied here) when we MIGHT really need it. Therefore, it would cost about 25% as much if we waited till we really needed it, not to mention that we never did.

Let's suppose your favorite car costs $30,000 new and will depreciate at a rate of 50% per year. Also, imagine that the only way you could buy it was using a credit card with a 40% annual interest. How old a car of that model would you buy? Doing the math can be very enlightening, especially when its your money that you're thinking about.

	Capital Cost	3 Years Interest at 40%	3 year Total Cost
New	$30,000	$18,000	$48,000
1 year old car	$15,000	$9,000	$24,000
2 year old car	$7,500	$4,500	$12,000

I know if this same math applied to automobiles, I would be buying cars that were at least two years old with 6+ years of useful life left in them. This would mean I would pay $3,000 per year when someone buying the same car new would be paying about $16,000 per year over 4 years. That is enough difference to be a competitive advantage, never mind just a cost savings when you consider you might need to buy 10, 20 or 30 of these things at a company.

Thankfully, the economics of a new car are not nearly as bad as some computer equipment, but I doubt many people would be driving brand new cars if they were.

Certainly they would not be buying new $250,000 computer equipment they did not really, really need yet.

It is not just engineers who can be taken in by the 'gotta have the latest and greatest' phenomenon. There are lots of very high-paid sales and marketing folks out there convincing everyone that their most expensive solution is the only way to go. Four thousand dollar laptops when a $2,000 will do fine), three thousand dollar desks (when a $400 one will do fine), and many other "image" products. Startups can rarely afford these and having them should and does scare investors.