



Stanford eCorner

Reducing Company Costs: Paypal and SpaceX

Elon Musk, *SpaceX*

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Video URL: <http://ecorner.stanford.edu/videos/392/Reducing-Company-Costs-Paypal-and-SpaceX>

Musk talks about how SpaceX is reducing the cost of launch vehicles. The focus is on every element of the vehicle and this has involved hundreds of small innovations as well as reducing overheads. In the case of PayPal, there were back office relationships that had to be established but everything was done in parallel, thus saving time.



Transcript

Well, I should point out that Falcon, our first vehicle, doesn't really have the same capability as either the Chinese, the Russian or the space shuttle vehicles that I mentioned. Falcon would be in the light class of launch vehicles, whereas the space shuttle would be a heavy-class launch vehicle so it's not quite apples to apples comparison. However, the right comparison would be Falcon compared to the Pegasus from Orbital Sciences. Falcon is six million; the Pegasus is 25 million. The way we've gotten our prices low, our cost low is we've really focused on every element of the launch vehicle. There's really no one silver bullet that has been responsible for a substantial portion of the cost savings. It's been really hundreds of small innovations and improvements, and so we've done improvements in the propulsion system, the structure, the avionics and the launch operations as well as maintain a very low overhead organization. When you add up all the things we've done in those areas, that allows us to produce the launch vehicle at \$6 million. As far as PayPal, there were a lot of back-office relationships that we needed to establish and to attach to various heterogeneous data sources. We needed to attach to the credit card system for processing credit cards.

We needed to attach to the Federal Reserve System for doing electronic funds transfers. We needed to attach to various fraud databases to run fraud checks. There was a lot that we had to interface with. That took a while. It all came together I think roughly simultaneously. I mean developing the software and having it ready for the general public reasonably coincided with us being able to conclude those deals and interface with the outside vendors, and all that took about a year. I think one thing that's important is to try not to serialize dependencies, so if you can put as many elements in parallel as possible. A lot of things have a gestation period and there's really nothing you can do to accelerate; I mean it's very hard to accelerate that gestation period. So if you can have all those things gestating in parallel then that is one way to substantially accelerate your timeline. I think people tend to serialize things too much.