



## Stanford eCorner

### The Twenty-Year Plan

Jeff Hawkins, *Numenta*

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Video URL: <http://ecorner.stanford.edu/videos/2247/The-Twenty-Year-Plan>

After becoming a PhD student in biophysics and facing numerous institutional hurdles barring his desire to study the neural cortex, Jeff Hawkins, Founder of Numenta, decided to think long-term. He put a career plan in place that has lasted over twenty years. Rather than pursuing his passions through academia, he decided instead to focus on making institutional change, adding credibility to his name, earning substantial financial revenues to fund his own pet projects, and helping the neuroscience community mature from the inside. Two decades later, arguably, he's accomplished all of these tasks, and he's still expanding their boundaries.



#### Transcript

I decided to go to graduate school and said, "How am I going to do it? If I can do on the computer world, I'll do it in the neuroscience world." I couldn't study traditional neuroscience so I got myself into a biophysics program. I became a PhD student in Biophysics in Berkeley, and I quit my job in the computer industry completely. I said, "I'm getting out of computer industry." Giving up seven years - this is 1986, I was giving up seven years of work in the computer industry and so I'm just going to become a graduate student. And so I did that and I start off at Berkeley. I'm commuting an hour everyday to get there, and I write a paper about what I want to do for my PhD thesis and I have some of the ideas later appeared in *On Intelligence*. And I wrote this paper and I submitted it to the Chairman of Graduate Program of Neuroscience at Berkeley, and he had a faculty meeting and we got together and he said, "This is a really good idea. This is a great problem you want to work on. You have some really good ideas on how to do this. But you can't do it." And I said, "What do you mean I can't do it?" "Not only you can't do it here at Berkeley, you can't do it anywhere." Because what I wanted to do is a theoretical mathematical approach understanding how the neocortex works. That was the specific thing and he said, "There's nobody doing this and as a graduate student you just can't do what you want to do.

You have to work for a professor." I was naive, I didn't understand this: That you couldn't study whatever you wanted to study, you have to work for somebody and study, and I was really bummed out. You have to imagine how bummed out I was. So I have this sort of major soul searching, and I said, "What am I going to do?" So I start spending all my time in the library at Berkeley just reading science papers - it was before the Internet of course. If you want to read papers, you've got to go to the library. And I had a big bill on my photocopy card and I was reading all these science papers. And I said, "I got to do something else here." So, I said, what I'm going to do? I put a plan in place that I've been playing out now for over 20 years. The plan was I'm going to go back to work in the computer industry and I would do four things. One thing I was going to do is I was going to mature. I was going to learn how to make institutional change. I think if I'm up against institutional barriers I have to make institutional change, how do I influence people, how do I get people to change institutional ideas, and so on.

I'm going to work on that. The second I did, was that I wanted to make a name for myself. I said, "Well, I have to be someone if people respect me they may listen more to me." The third thing I want to do is I want to make some money because I needed to afford to be able to be a student again. I was starting to have a family and I said in the future. I'm going to

have to pay for my own research. I'm going to do various things I don't know what's that going to be it's going to take some cash. And the last thing I said, "Well, the Neuroscience Community would mature," and so that was great. Now again, I'm not thinking like being an entrepreneur. I'm not thinking this at all, I'm just going back into the computer industry so I went back to my own employer GRiD and I came back in sort of an entrepreneurial role. I came back to design a new product which I had proposed to them while I was gone, and I brought some intellectual property with me, so I have a special licensing deal that way I'm going to make some extra cash.

And I went and created what was the first tablet computer we call the GRiDPad. And I learned to build and manage a team of people and this all went great. It went just on plan. Everything worked out well, I became fairly well known in the computing industry. I talked at a lot of conferences. We introduced this product. It was very exciting for - you all too young to know this (most of you are too young to know this) but there's a huge bubble pen-based computing back in like 1990 to 1991 and so I was in the middle of all that.