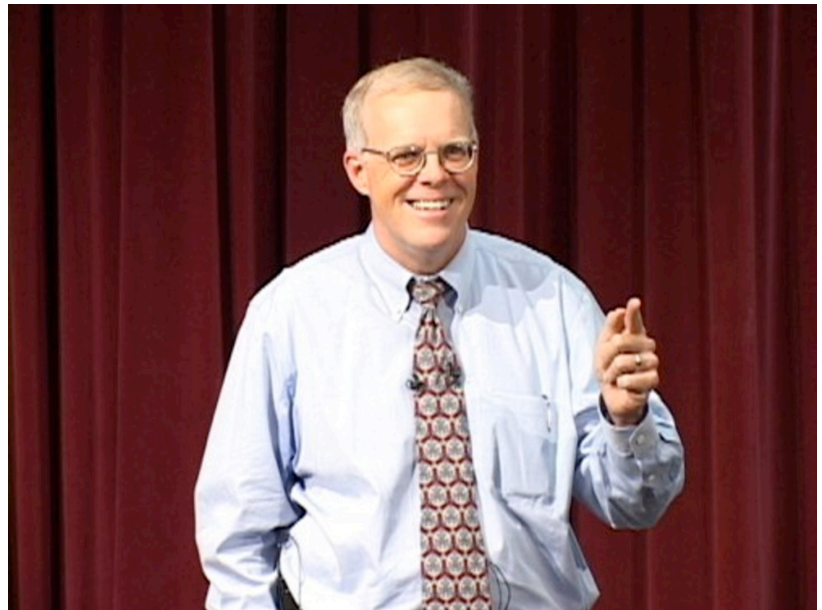


URL: <https://stvp.stanford.edu/blog/videos/the-way-to-predict-the-future-is-to-invent-it>

Hennessy predicts that the internet revolution is only half over. The remaining opportunities will be harder to find, but there is still a big impact to be made. Computers are still way too complicated and could be doing a lot more for the user. Wireless technology will increase mobility. In order to allow the continuation of increased performance in computing, there will have to be some major changes in technology.



## Transcript

That is a great question.. So my first answer to that is "The way to predict the future is to prevent it." An old quote by Alan Kay who just won the touring award for his work on Smalltalk, I do believe that it is very hard to predict exactly what is going to happen.. Now that said, I think there are some things are going to happen.. I think the Internet revolution is only half done.. That we have only seen it have half its impact.. It's going to continue and have more impact.. It's going to be harder to find those opportunities, they are going to require larger investments on longer incubations because they are no longer the low hanging fruit that was so easy to pluck off the tree the first time around but there is still a lot to be done and it's in everything from supply and chain management, business to business commerce and you know when I really look at it, the computer has come a long way but my life is still far too complicated and no computer in the world even comes close to what a great personal assistant can do for you and straighten out your life and make you work better.. So we still have a lot that can be done on that side.. I think wireless technology is going to change things in fundamental ways and we are just at the beginning of that.. I am really seeing--I think we are going to get mobility like you have never seen mobility..

People are going to be able to be connected anytime, anyplace.. Your work may chase you around wherever you go, that maybe the downside but I think it really will change things.. Then I think there are some technologies that I would say are critical breakthrough technologies where it's not clear what the technology is yet but we know it has to happen.. There has to be some replacement for silicon as we use it today in CMOS and field effect transistors.. That has to be out there! I do not know what it is but when it comes out its going to change things in quite the fundamental way.. Computing will have to change.. We cannot continue to produce ever higher performance computers using the same techniques that we have used essentially since the risk days.. The key concepts that have worked today in the Pentium 4 are the key basic insights; there are variations, there are improvements but the basic insights are probably 20 years old.. So we are basically on a roadmap we have been on set down 20 years ago.. It's not going another 20 years I will tell you that..

I may not go another five.. So we are going to have to reinvent new ways of doing computing; out there they are going to probably make use of more parallelism and other things though that is a hard problem and I do not know when the breakthrough will come, whether when exactly we would get it but I think we will have to get it and eventually we are going to have do something about software productivity and software engineering because it takes too long to write code, it's too bogey, it's too hard so we will eventually we have to work on that problem.. And if somebody cracks that nut, that will produce a very large crack exam and there will be lots of interesting opportunities.. Anybody else, back there?..