

Mitchell's Musings 2-14-11: Technology and What We Know

There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.

Donald Rumsfeld

It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so.

Mark Twain

I have been musing about “technology.” We tend to believe that we are living in an unprecedented age of technological advance. The new technology will change the labor market. People will be able to work from anywhere. Collaborations and team efforts will be enabled. Jobs of the future will be wholly different from today. And just to make the point, nowadays, if you want to see Rumsfeld make his famous remark, you can just click on YouTube at

<http://www.youtube.com/watch?v=GiPe1OikKQu> and there it is.



The image is a screenshot of a YouTube video player. The video title is "Donald Rumsfeld Unknown Unknowns!". The video is uploaded by "BezanDarro" and has 11 videos in the series. The video player shows a man in a suit and tie speaking. The video has 63,479 likes and 1 dislike. The video was uploaded on August 07, 2009. The video player also shows a "Suggestions" section with several related videos, including "Known knowns, know unknowns, and Unknown unknowns", "Bush Actually Said TR", "RUMSFELD'S BEST", "Donald Rumsfeld - TR HILARIOUS!", and "Rumsfeld being an idi".

In contrast, the best we can do for Twain – because he lived in an earlier era - is offer you an old silent movie

<http://www.youtube.com/watch?v=leYj--P4CgQ>



But before we let the notion of unprecedented technological advance get the best of us, a bit of humility is in order. After the LERA meetings in early January, my wife and I had some time before our plane back to Los Angeles and we went to the Denver Art Museum. On exhibit was the painting below by George Ottinger completed in 1873.



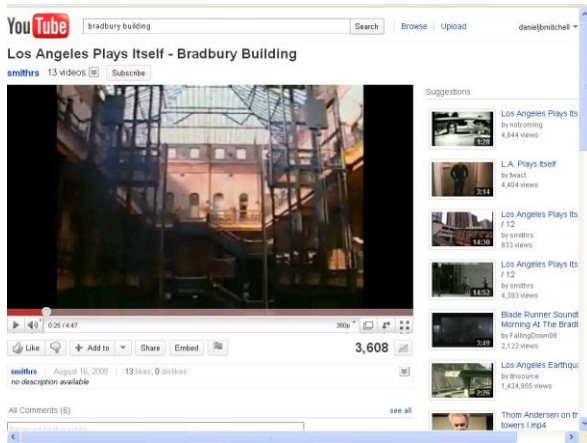
A nineteenth century observer would have had no trouble interpreting the image. A pony express rider is contemplating his future displacement as he observes telegraph polls being erected. New technology! The telegraph, by the Civil War era, had enabled instant communication across the country and – once the Transatlantic cable was laid – across the world. It facilitated commerce, united markets, and made

possible long-distance railroads. Folks in that period would have thought they lived in an age of unprecedented progress.

A visitor to downtown Los Angeles would do well to visit the Bradbury Building, completed in 1893. (Yes, Virginia, there is a downtown Los Angeles.) Indeed, you have probably seen the building already because it appears in numerous Hollywood films, notably *Blade Runner* (1982), and more recently *500 Days of Summer* (2009). The building is said to have been inspired by Edward Bellamy's book, *Looking Backwards* (1888). *Looking Backwards* is a Rip Van Winkle story in which the main character somehow wakes up in the year 2000 and finds a utopia in which wages no longer exist, folks retire at a young age to enjoy a pleasant leisure, and various technological miracles are in evidence. But what the Bradbury Building actually looks like is the latest thing in the early 1890s, i.e., a linear projection of what seemed ultra-modern then.

YouTube is again our enabler; you can see the Bradbury Building in various movies at

<http://www.youtube.com/watch?v=CwmsZrvfOv8>



It isn't just late 19th century architects and authors who got the future wrong. As noted, the Bradbury Building was a prime location in the movie *Blade Runner*. As seen from 1982, by the year 2019 when the movie takes place, Los Angeles would be dominated by Japan – not a word of Spanish is heard in the film. Runaway bio-tech engineered “replicants” from other planets that we apparently would be visiting were on the loose in the city. Could anyone have known in 1982 that as we approach 2019, the American space program would be in a shambles and American astronauts would be dependent on the Russians (once the last space shuttle is mothballed) to get them into space? Could anyone have known that Japanese real estate investors in Los Angeles would lose their shirts in the commercial property bust of the early 1990s?

Is there evidence that technology is now racing ahead in an unprecedented fashion? The main indicator we have is the multifactor productivity index produced by the U.S. Bureau of Labor Statistics which purports to take account of the growth of labor and capital in explaining the change in real output. To the extent that output grows faster than can be explained, the index is viewed as an indicator of

technological progress. Of course, this type of “residual” methodology for estimating the advance of technology can be criticized. But unless you have a better measure, consider that from 1948 to 1990, the index grew at about 1.5% per annum. Let’s take that 42-year period as a base.

We tend to view the period from 1990 on as corresponding to the Internet boom. However, the multifactor productivity index from 1990 to 2009 rose at a modest 1.1% annual rate, i.e., more *slowly* than in the post-World War II period up to the Internet era. (If you want to factor out the depressing impact of the Great Recession, you can look just at the period 1990 to 2006 when the rate was 1.2% per annum.) Where is the great acceleration in technological progress? It is not apparent that there was one.

The lesson from the past is clear. Be very cautious about brave predictions of the future. They tend to be linear projections of immediate tendencies. And they inevitably assume that the current period is one of unprecedented technological progress that will change everything. If you need further convincing, you can contemplate the image below.

