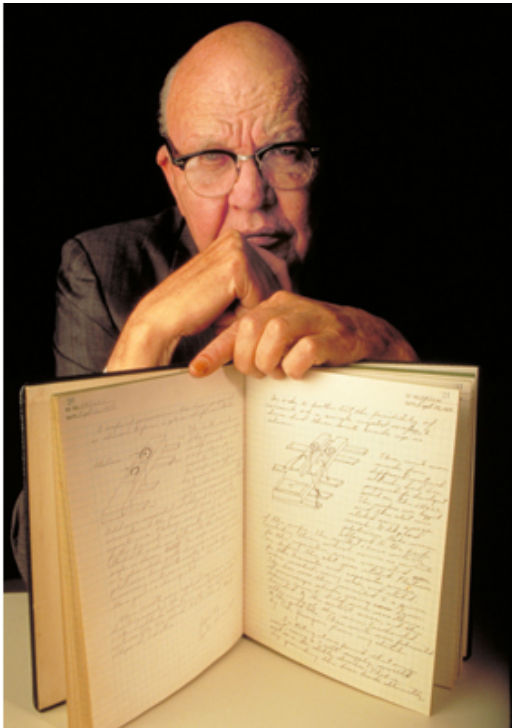


Some Perspectives on Innovation

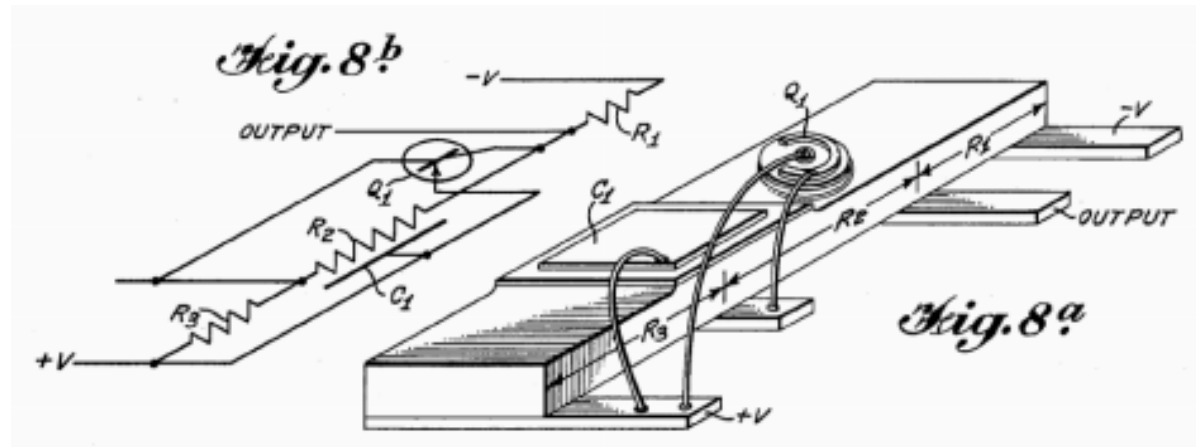
Mahesh Mehendale

November, 2008

50 years since the invention of Integrated Circuit



Jack Kilby



U.S. Patent 3,138,743
Miniaturized Electronic Circuits

Nobel Prize in Physics, 2000

Jack Kilby quotes

- u "In 1958, my wife and I moved to Dallas, Texas, when I took job with Texas Instruments. TI was the only company that agreed to let me work on electronic component miniaturization more or less full time, and it turned out to be a great fit."
- u "When I started at TI in May of 1958, I had no vacation coming that year. So I worked through the period when about 90 percent of the workforce took what we called "mass vacation". I was left with my thoughts and imaginations."
- u I would like to mention another right person at the right time, namely Robert Noyce, a contemporary of mine who worked at Fairchild Semiconductor. While Robert and I followed our own paths, we worked hard together to achieve commercial acceptance for integrated circuits. If he were still living, I have no doubt we would have shared this prize.
- u "They are for scientists, who are motivated by pure knowledge. But I'm an engineer. I'm motivated by a need to solve problems, to make something work. For guys like me, the prize is seeing a successful solution."

Jack Kilby – the innovator

- u “tyranny of numbers” - Definition of the “right” problem
- u Innovation is a way of doing things – 60 patents including handheld calculator and thermal printer
- u Focus on converting invention into an innovation

References:

- u <http://www.ti.com/corp/docs/kilbyctr/kilby.shtml>
- u http://nobelprize.org/nobel_prizes/physics/laureates/2000/kilby-autobio.html
- u http://nobelprize.org/nobel_prizes/physics/laureates/2000/kilby-lecture.html
- u <http://www.washingtonpost.com/wp-dyn/content/article/2005/06/21/AR2005062101646.html>

Intrapreneurship

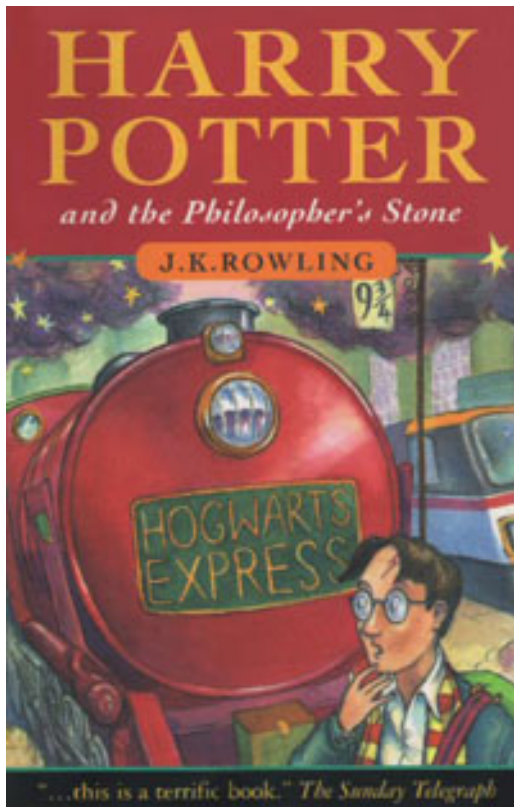
- u Intrapreneurship is a term made prominent by Gifford Pinchot (1985) in his book, "Intrapreneuring: Why You Don't Have to Leave the Corporation to Become an Entrepreneur."
- u Pinchot (1985) defines an intrapreneur as a "person who focuses on innovation and creativity and who transforms a dream or an idea into a profitable venture, by operating within the organizational environment."

The Ten Commandments for Intrapreneurs

1. Do any job needed to make your project work regardless of your job description
2. Forget pride of authorship, share credit wisely.
3. Remember, it is easier to ask for forgiveness than permission
4. Come to work each day willing to be fired
5. Ask for advice before asking for resources
6. Follow your intuition about people; build a team of the best;
7. Build a quiet coalition for your idea; early publicity triggers the corporate immune system
8. Never bet on a race unless you are running in it
9. Be true to your goals, but realistic about ways to achieve them
10. Honor your sponsors.

Prof. Randy Pausch

- u Professor of computer science, human-computer interaction and design at Carnegie Mellon University (CMU) in Pittsburgh, Pennsylvania
- u He gave his "The Last Lecture" speech "Really Achieving Your Childhood Dreams" on September 18, 2007 at Carnegie Mellon. Pausch conceived the lecture after he learned that his previously known pancreatic cancer was terminal.
- u "brick walls are there for a reason: they let us prove how badly we want things" – Prof. Randy Pausch
- u <http://www.cmu.edu/randyslecture/>



J K Rowling

5th June 2008, Commencement address at Harvard "The Fringe Benefits of Failure, and the Importance of Imagination"

<http://harvardmagazine.com/commencement/the-fringe-benefits-failure-the-importance-imagination>

Innovation

- u “If you are not prepared to be wrong, you will never come up with something original.” – Sir Ken Robinson at TED, Feb 2006

http://www.ted.com/index.php/talks/ken_robinson_says_schools_kill_creativity.html

- u Randy Pausch’s Course on “building virtual worlds” – setting the bar high

- u “When you get math involved, problems that you solve for aesthetic value only or to create something beautiful, turn around and turn out to have an application in the real world” – Robert Lang, TED, Feb’08

http://www.ted.com/index.php/talks/robert_lang_folds_way_new_origami.html

Evelyn Glennie

- u “My job is all about listening, and my aim really is to teach the world to listen” - Evelyn Glennie, the Grammy-winning Scottish percussionist and composer, TED, Feb 2003

http://www.ted.com/index.php/talks/evelyn_glennie_shows_how_to_listen.html

- u Broadening the definition of “listening”
- u Challenging the norms, breaking the barriers
- u Diversity

Summary

- u It's about right ideas and right approach
- u Setting the bar high, solving the "right" problem, building on fundamentals and looking "out of the box", encourage and leverage diversity, ...
- u Conviction, passion, big dreams, learning from failures, not being afraid of making mistakes, ...

THANK YOU