



From Bell Labs to Angel Investors

How the source of innovation
in wireless is shifting



Professor William Webb

- “The successful exploitation of new ideas” – Technology Strategy Board, UK
- Is all innovation good? (financial service?)
- Do those who call for it actually want it and do much to make it happen?
- Not just technology – also process ideas, etc.



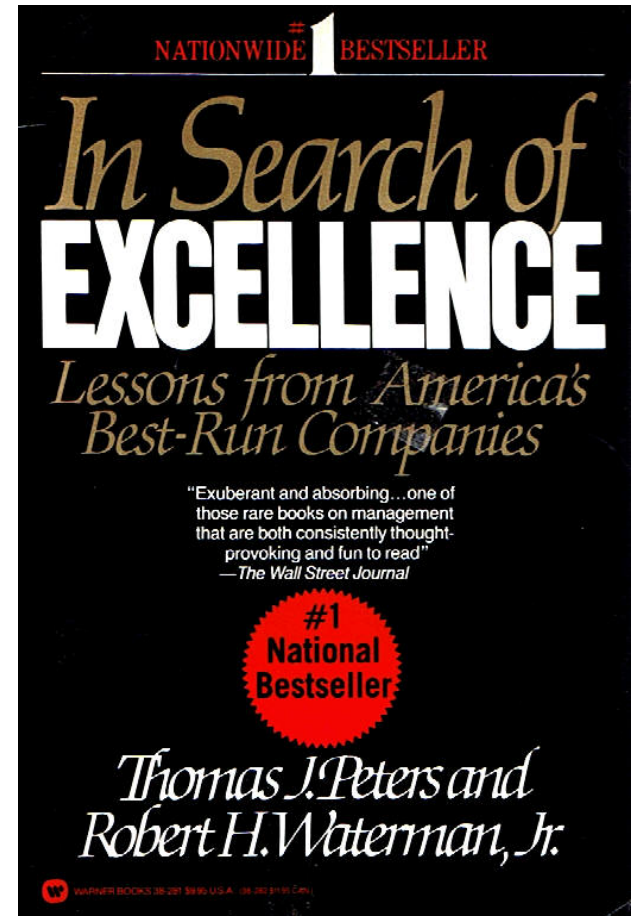


- Bell Laboratories has research and development facilities throughout the world
- Credited with the development of radio astronomy, the transistor, the laser, the charge-coupled device (CCD), information theory, the UNIX operating system, the C programming language and the C++ programming language
- Seven Nobel Prizes awarded for work completed at Bell Laboratories.



AP / Paul Sakuma

- The iPod, iPad and iPhone have revolutionised digital connectivity
- And without Steve it does look like Apple are struggling
- Even he didn't always get it right



- So what is changing in the world?



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- Innovation often comes as a solution to a problem – good to be exposed to lots of real and hard problems.



- Less corporate R&D
- Broad failure to get ideas out of corporate labs
- Recognition of innovators' dilemma
- Better acquisition and integration of start-ups as a route to scale
- Less military spending (led to many previous innovations).
- (So why do we pay so much attention to what large companies say they'll do?)

For the WSJ Awards 2012, 65% of entries and 85% of winners were from SMEs



- Spread messages
- Speed change
- Market ideas
- Sell products
- Provide platforms and services





- Current problems include
 - Healthcare
 - Security
 - Energy
 - The Cloud
- But most “innovation” very incremental

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- Tempting to believe that the Internet means location is not important, however...
- Clusters do make a difference
 - Recruitment
 - Facilities
 - Brand and image
 - Funding
 - Support organisations (eg conference companies)
- Clusters favour small companies
- Lots of exposure to hard problems
- Experienced entrepreneurs make 3x difference to success rate

- Difference between terminal and networks and the “two-ends” problem
- Need for regulation
- Barriers to entry
- Domination by mobile operators
- Need for more Government intervention





- White space as an enabler, plus for UK but need help to go global
- Technical bit simple – it's all about perception
- Open standard, problems with current bodies, establishing a new one expensive but plausible with Internet
- Problems with getting mobile operators to innovate – need a truly competitive telecoms market
- Need a clear market, smart meters helps, other Government procurement for smart cities would be good
- Clearer signs innovation will be promoted
- (Interesting no large company in this space)



- Take an individual with all the right personal characteristics (inventive, experienced, optimistic, driven, persuasive)
- Put them in the right environment (cluster, exposure to issues, VC community)
- Pick something more than incremental but where barriers to entry etc are tractable (hard but not too hard)
- Use new communications tools effectively (not necessarily excessively) – have PR team on board from start



- Not large companies (except Apple)
- As much about PR as engineering
- Locality is important despite “globalisation of Internet”
- National regulation may be important
- Engineering skills necessary but far from critical



- Progressively lost manpower due to layoffs and spin-offs making the company shut down for a short period of time.
- As of July 2008 only four scientists remained in physics and basic research,
- In August 28, 2008, Alcatel-Lucent announced it was pulling out of basic science, material physics, and semiconductor research
- It will instead focus on more immediately marketable areas, including networking, high-speed electronics, wireless networks, nanotechnology and software



There's no formula for innovation –
you have to be innovative