

BOOK REVIEW

A Review of "Loonshots: How to Nurture the Crazy Ideas that Win Wars, Cure Diseases, and Transform Industries"

Safi Bahcall, St. Martin's Press (2019)

Review By: David Mays, Lt Col, PhD

Loonshots, by Safi Bahcall, is a thought-provoking book that discusses his ideas on group behavior, both in the civilian and military fields, and the challenges of nurturing radical breakthroughs in teams. His book focuses on what he calls *loonshots*, which are breakthroughs in discoveries that are widely dismissed due to the nature of the idea and the champion of the idea is written off as crazy or irrational.

Safi Bahcall, a Harvard graduate with a PhD from Stanford is a second-generation physicist and a biotech entrepreneur. Bahcall worked several years as a consultant and afterwards he co-founded a biotechnology company that developed new drugs for cancer. For his work on *Loonshots*, Bahcall drew upon the science of phase transitions to show why teams, companies, and military organizations will suddenly change from embracing wild new ideas to rejecting them.

Bahcall said "The most important breakthroughs rarely follow blaring trumpets and a red carpet, with central authorities offering overflowing pots of tools and money. They are surprisingly fragile. They pass through long dark tunnels of skepticism and uncertainty, crushed or neglected, their champions often dismissed as crazy-or just plain dismissed" (p. 7).

In writing the book, Bahcall recounts several big projects in history that were at first widely ignored. The first example was the idea of the radar for use by the military. Two young enthusiasts who were working on a ham-radio accidentally figured out how a radar works and it was the earliest known proposal of radar to use on the battlefield.

Their idea quickly ran out of steam and funding dried up for the project, and it was years later before it was resurrected, completed, and became one of the most important technological advances in terms of warfare. This breakthrough was a radically new idea but fell through as a loonshot.

Bahcall describes two main types of loonshots, the *P-type* loonshot and the *S-type* loonshot. The P-type loonshot is described as a breakthrough in a particular new idea involving a product, such as a new engine that is faster, stronger, and allows an airplane to travel a further distance than the current engine. The P-type loonshot is the newest and greatest of the product that is available or soon to be available.

Bahcall explains the P-type loonshot in his book in relation to the downfall of Pan American Airways. Pan American Airways was once among the largest companies in America led by Juan Trippe. Trippe wanted the most advanced jet engines available and larger jets to go further and carry more passengers. Trippe wanted the P-type loonshot and he was able to grow his company into one of the most successful companies for many years. The deregulation of the airline industry and the start-up of S-type loonshots eventually brought down Pan American Airways.

The other type of loonshot described by Bahcall is the S-type loonshot. This loonshot is best described as a change in strategy. A change in strategy versus change in product can make vast improvements to your business or military processes without major investments into products that may or may not work. An example used by Bahcall was the downfall of IBM by losing the S-type loonshot. IBM was a successful company grossing \$13 billion in sales in 1981, however the old hardware lost its supremacy to other companies like Microsoft and Intel due to an S-type loonshot involving software and what the customer wanted, not the brand on the box.

Bahcall described other successes and failures in his book such as the ups and downs of Steve Jobs with Apple and Pixar companies, not to mention the failed companies he lead. The success or survival of American Airlines because of an S-type loonshot, the race to the nuclear weapon, the battles in Xerox, and how empires are made or lost are due to loonshots. Bahcall describes another theory called the *Moses Trap*, described by him as “when ideas advance only at the pleasure of a holy leader--rather than the balanced exchange of ideas and feedback between soldiers in the field and creatives at the bench selecting loonshots on merit—that is exactly when team and companies get trapped” (p. 93). The importance of loonshots in winning wars and how great ideas from your teams can get shot down, is the difference between company success and company failure. Bahcall swiftly describes his main points:

1. The most important breakthroughs come from loonshots, widely dismissed ideas whose champions are often written off as crazy.
2. Large groups of people are needed to translate those breakthroughs into technologies that win wars, products that save lives, or strategies that change industries.
3. Applying the science of phased transitions to the behavior of teams, companies, or any group with a mission provides practical rules for nurturing loonshots faster and better. (p. 2)

Bahcall’s book is very useful to leaders at all stages/ phases of their career and to organizations that work to innovate or strive to improve their products and strategy. Comparing his loonshots to the military field we can see slight innovations in processes and products over time, always looking for those P-type and S-type loonshots to pop up. This book will help civilian and military leaders look for the loonshots in their organizations and hopefully provide these loonshots an opportunity to flourish.

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