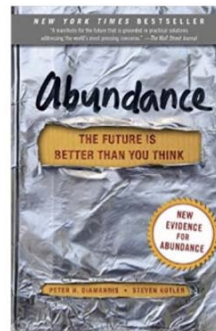


SPACE JAPAN BOOK REVIEW

From a satcom researcher point of view

Reviewer: Takashi Iida, Editorial Advisor



Peter H. Diamandis and Steven Kotler: "Abundance The Future Is Better Than You Think", Free Press, 2012.

Dr. Diamandis, author of this book, is one of the International Space University founders, and he is also the founder of Ansari X Prize of a suborbital flight. In this way, because he is connected with space very much, this book seems to be appropriate to this column. Since I myself have listened in his presentation at the IAF (International Astronautical Federation) meeting and have met him, I feel to be easy to understand his book. This book review is based on Japanese translation version.

<http://www.amazon.com>

Dr. Diamandis received a degree of molecular biology and a degree of aeronautical engineering from Massachusetts Institute of Technology (MIT) and a medical degree from Harvard Medical School. He is now X prize foundation CEO, entrepreneur of many companies, and he received a lot of prizes including Arthur C. Clark prize. Mr. Kotler, co-author of this book, is a journalist and a writer to contribute to magazines such as the New York Times, Wired, and Popular Scientist after his graduation from Wisconsin University.

This book focuses on aiming at realization of "the abundant world" in light of various episodes and theoretical consideration. According to Club of Rome's "Limit of Growth" [1], it is claimed that resources was exhausting by an explosion of population, and the time left until it is smaller. As a solution of that purpose, there is a thought that the increase rate of population should be reduced and consuming resources must be shared efficiently. This book argues that distributing a pie to smaller one is not good measures for the threat of scarcity, rather it is more effective to think about how to make a lot more pies. That is, this book argues on how to achieve the "abundant world" that can be in contact with more enormous information and education while securing necessary thing for life, rather than simply distributing wealth.

The realization of the abundant world does not mean that all of the people are to make their lives luxurious, but means for everyone to live a life that is full of possibilities. Not that every person eats while suffering, it is the world that the day-to-day spends to draw a dream and continues to achieve it. However, there is still something ambiguous in the definition of the abundant world, the author is trying to explain it by using the concept of a pyramid of abundance. The bottom layer of the pyramid is such as food, water and housing that people can not live without it, the intermediate layer is such as education opportunities, energy and access to communication and information that intends to promote further growth, the top layer is such as the essential freedom and health for individual contribution to society. What is important is that population is not increased by improving the life. Conversely, time could be used for education, living standards increased and population growth was suppressed, if a long hours work for getting water and fuel was improved to be a short time.

The media coverage tends to increase the pessimistic news. As an example, although there is a general criticism that "the gap between rich and poor continues to expand", It is not a problem as many people have thought. The Indian National Applied Economic Research Institute announced the estimate that the number of high income households of middle class (46.7 million households) exceeds the number of low-income households of middle class (41 million households) in India in 2010 for the first time in history. Also, even though the poor, for example, even poor hierarchy in the United States uses television, telephone, private cars and the refrigerator. Even millionaire did not own them only 100 years ago.

The problem is whether or not actually abundant world can be realized. Because the exclusive technology can be obtained at low cost now by the exponential advances in technology, things that government could only do thing such as the fight against hunger previously has come to be performed by small groups. The author believes to be able to perform it within next 25 years.

As a force to realize the abundant world, DIY (do-it-yourself) innovator, technology philanthropists and rising billions are cited. In particular, for the DIY innovator, the contribution of thinker Stewart Brand [2] is written so that it can be easily understood. According to it, he has a great interest in DIY and published "Whole Earth Catalog" that is a catalog of every tool and material that can be used in DIY. Among them, a personal computer was picked up as the most effective tool in DIY, which was not yet common at that time, and a group called "Home Brew Computer Club" was established. The people including Apple founder joined to this group. They created a personal computer to be easier to use even for the general. For

example, since Moore's Law indicates that the number of transistors on a single integrated circuit is doubled every 2 years, the pace of progress in the capabilities of computers is typical of truly exponential development. Idea that can do myself has contributed to the spread of these technologies.

In addition, modern techno-philanthropists are the people who obtained wealth as young successful entrepreneurs, and who invest their wealth to the various projects, especially realization of abundant world. Such a person has appeared many. In what we call the Rising Billion, if the business is established even for a billion poor people, and if a smartphone can be used, various types of efficient electronic equipment could be used, and intellectual activity could be done without wasting resources. And, these people will become a source of activities of the next generation.

This book focuses on many high-technologies such as an artificial intelligence and introduces them. As one of interesting technologies, a toilette technology is introduced. Exactly excreta in toilet can be used as an energy source. The water can be also reused. In addition, the technology of vertical cultivation can supply a large amount of food even in a narrow place and the technology to grow the necessary part of meat itself for food is introduced.

This book also cites the technology of electric power generation, such as the fourth generation nuclear reactor including thorium nuclear reactor [3], cheap solar cell and superior battery. However, although small-scale power generation facilities is suggested to be appropriate for individual use, no vision is shown in what ratio it should be introduced for large-scale power system as a whole.

You may think the contents of this book as something optimistic. Although the prospects of future technology might be certainly optimistic, it may be a problem that we become pessimistic in the first. This thing is said in the book review of the Nikkei Shimbun newspaper [4]. The translator of this book also said the same thing.

In order to accelerate the innovation, break-through and progress of technology, this book introduces many prizes such as the Ansari X Prize, which was described at the beginning, International Genetically Engineered Machine competition (iGEM) and "Qualcomm Tricorder X Prize". Furthermore, the author of this book established the Singularity University [5] in order to foster the entrepreneurs to challenge the difficult problems faced to mankind. In this university the students seem to listen to the lecture as the first half of course as same as the summer courses of the International Space University, and to develop new projects in its second half. Although there seems to be a variety of discussion about the handling of the achievements of students for this university [6], entrepreneurial activity of university graduates are like active, including a manufacturer of 3D printer in space, Made in Space, Inc., [7], as an example.

This book shows many charts that are based on the textual description of fact over 80 pages with references list. In addition, it introduces many interesting research achievements along with the personality of the researchers. But, unfortunately no Japanese has been introduced. Furthermore, risk of technology that advances exponentially is discussed in Appendix.

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