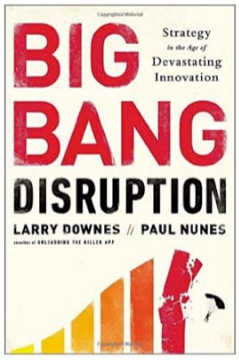
SPACE JAPAN BOOK REVIEW

From a satcom researcher point of view

Reviewer: Takashi Iida, Editorial Advisor



http://www.amazon.com

Larry Downes and Paul F. Nunes: "Big Bang Disruption Strategy in the age of devastating innovation", Portfolio, 2014.

Because the topics related method of research and development are within the range concerned of this column, this book was picked up. The "big bang disruption" in this book is a somewhat shocking title, although the title of Japanese translation version is "Big Bang Innovation". I will introduce this book in my own way of interpretation with adding information around, although this book is included to exceed my understanding. Misreading should be avoided. But please forgive me if there is a misunderstanding. The most of this review are based on Japanese translation version of this book.

The author of this book, Larry Downes, is a Silicon Valley based consultant. He received his B.A. from Northwestern University in 1980 with Honors in English, History, and Computer Science. He received his J.D. with High Honors from the University of Chicago Law School in 1993 [1]. He held a faculty appointment at the Northwestern University School of Law. He was also an Adjunct Professor at the University of California, Berkeley. He is currently a Fellow of Accenture [2] that is the world largest management consulting company in the number of employees, through the consulting company such as Andersen Consulting and McKinsey & Co. He is studying from a long-term point of view what will change in industrial structure by suddenly happened innovation. He has been a contributor to a number of magazines, such as The Wall Street Journal and The Economist. There was also a popular article that became a total 3.5 million pv (page views). The co-author of this book, Paul F. Nunes, is an Accenture devoted marketing professional since 1986. In order to help the evolution of IT in the prediction of the business, he contributed to establish the company's High-Performance Research Institute. He has served as Research Director of Global Management of the institute.

Well, what the title of this book means, while it is provocative a little. According to this book, current innovation has emerged very quickly, while conventional innovation has been realized by spending a lot of time. Furthermore, it was accompanied by a huge investment, but current innovation is realized by very less investment and time. The sense that the large-scale innovation occurs in a short period of time seems to be called as the Big Bang in this book. Its main cause is due to the exponential development of technology. In general, it is referred to as the IT revolution. Its source is the Moore's Law that was proposed by Gordon Moore, the co-founder of Intel, in 1965. The processing capability of semi-conductors doubles every one to two years, while the cost is not changed. Phenomenon of progressing exponentially in this way is not limited to operational processing performance of the semiconductor. It is also found in the relevant technology such as data storage device, a memory, and data communication. In addition, by combining with the excellent features of the software that can replicate and distribute in less little cost via the Internet, the environment is born that the time from innovation to market becomes faster and faster and moreover cheaper. As a result, even far away industry from the world of computing is affected devastatingly.

In the case of navigation application for mobile devices that is cited as an example of the big bang-innovation in this book, because it is developed by using new technology such as the Internet and cloud computing, it will be able to provide better and cheaper services from the created moment than the existing product, and it shakes the mature industry in the short period and gives a blow to the existing companies. In particular, in this case, the importance of the development management increases. Research and development techniques described in this book seem to be referred to a recent topic of open innovation [3]. That is, instead of being developed from one in-house, the environment is already provided that can be finished a new one in a short period of time by using many techniques have been developed by other companies. Many game industries have been described as examples of the big bang innovation in this book. I think that the development of the current "Pokemon GO." is convincing [4].

Strictly regulated service in the industry restricts competition within the industry both in public and private. Because innovation is not encouraged, it is a rather vulnerable to big bang innovation and it is said to be an easy field to tackle the innovation. Where there are signs that the big bang innovation appears is that the lawsuits and lobbying becomes suddenly lively. On-demand dispatch service of taxi and limousine takes advantage of the new technology. Uber and Sidecar that provide a ride share service are mentioned as examples. In addition, Airbnb and Wimdu have conducted experiments that lend a personal home as a place to stay to the travelers.

In the big bang innovation, as mentioned above, life cycle of services and products will become characteristic by reducing the cost required for manufacturing, information collection and experiments by the exponential technology. In the traditional life cycle, a graph of the number of adopters of service and product vs. elapsed time has a bell-shaped, which shows development phase, dissemination phase, prime phase and decline phase. But, in the big bang innovation, because service products only either sell at once or not at all, the status changes in a very short period of time, so the life cycle is to draw a shape, such as the cliff that was towering, called as "Shark fins" type. Four stages are included in this shark fin, ie, "Singularity", "Big bang", "Big crunch", and "Entropy". For more information should refer to this book itself.

Finally, I am allowed to write what I think. From the researcher point of view, it is not just that the innovation is achieved in the quick way. Considering a communication technology, the derivation of the Maxwell equation is based on a century or more accumulation of theory and experiment including M.Faraday's contribution [5]. Based on the contribution above, we should think in our mind that the Internet technology, which has become commonplace at present, is based on the probability statistical theory of N.Wiener of the signal in 1940s [6], and the information theory of C.E.Shannon in 1948 [7] [8]. In addition, it is necessary to pay attention that no longer researchers' interest would be disapeared, if technology was mature and just a price became a matter [9]. Therefore, It will be necessary to pay attention to technological innovation taking a long-term. It should be noted that the development of exponential techniques and its social impact have been taken up in the references [10] [11]. In addition, while the artificial intelligence (AI) becomes very advanced recently, I felt this book like somehow old to me, because there is only little description about AI. I wonder if this is only my feeling. If the change occurs in the very short term as described in this book, the chance to recover the failure would come soon. I thought this was a hope for the future.

In addition, the book review of the Nikkei Shimbun [12] may be noted that would be helpful.

References

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