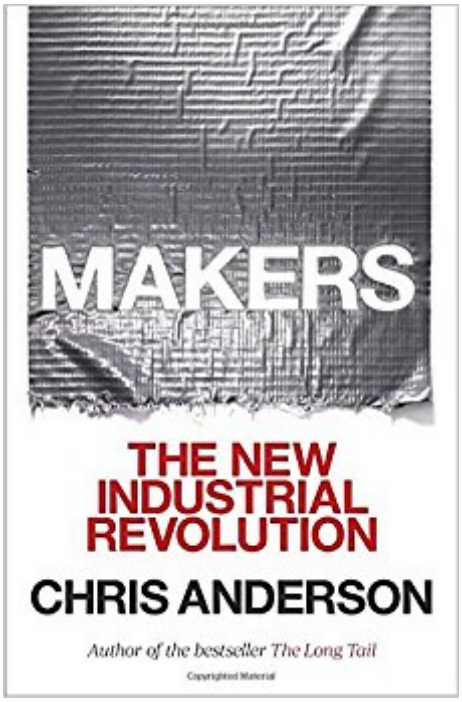
# Makers: The New Industrial Revolution



## Synopsis

3D Robotics co-founder and bestselling author Chris Anderson takes you to the front lines of a new industrial revolution as todayÃ¢â ¬â„¢s entrepreneurs, using open source design and 3-D printing, bring manufacturing to the desktop.Ã Â In an age of custom-fabricated, do-it-yourself product design and creation, the collective potential of a million garage tinkerers and enthusiasts is about to be unleashed, driving a resurgence of American manufacturing.Ã Â A generation of Ã¢â ¬Å“MakersÃ¢â ¬Â• using the WebÃ¢â ¬â„¢s innovation model will help drive the next big wave in the global economy, as the new technologies of digital design and rapid prototyping gives everyone the power to invent--creating Ã¢â ¬Å“the long tail of thingsÃ¢â ¬Â•.

## Book Information

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## Customer Reviews

"A thrilling manifesto, a call to arms to quit your day job, pick up your tools, and change the future of manufacturing and business forever.Ã¢â ¬Â• Ã¢â ¬â œBoingBoing"Chris Anderson has been called many things: a visionary, a pioneer of the Internet economy, a proselytizer of DIY 2.0. But it’s probably more apt to think of him as a weather vane: He might not control the winds of change, but he’s often the first to see which way they’re blowing." -Foreign Policy"Chris understands that theÃ Â owners of the means of production get to decide what is produced. And now you’re the owner. This book will change your life, whether you read it or not, so I suggest you get in early." Ã¢â ¬â œSeth Godin, bestselling author of Tribes and Purple CowÃ¢â ¬Å“A visionary preview of the next technological revolution.Ã Â If you want to know where the future is headed, start

here.Ã¢â ¬Â• Ã¢â ¬â œTom Rath, author of StrengthsFinder 2.0Ã Â Ã¢â ¬Å“Makers is must read for understanding the transformative changes that are shaping, and will shape, the future of inventing.Ã¢â ¬Â• Ã¢â ¬â œDan Ariely, author of Predictably Irrational and The Upside of Irrationality"Inspiring and engaging. Anderson delivers a compelling blueprint of a future where America can lead in making things again." Ã¢â ¬â œElon Musk, co-fouder of Tesla Motors and CEO of SpaceXÃ Â Ã¢â ¬Å“In Makers, Chris Anderson gives us a fascinating glimpse of a hands-on future, a future where Ã¢â ¬Ëœif you can imagine it, you can build it.Ã¢â ¬â„¢Ã¢â ¬Â• Ã¢â ¬â œDan Heath, co-author of Switch and Made to StickÃ¢â ¬Å“For those who have marveled at the way software has helped disrupt industry after industry - buckle up, that wave is coming soon to an industry near you. Chris Anderson has written aÃ Â compelling and important book about how technology is about to completely shake up how America makes things. Ã Â Required reading for entrepreneurs, policy makers, and leaders who want to survive and thrive in this brave new world.Ã¢â ¬Â• Ã¢â ¬â œEric Ries, author of The Lean Startup"The Maker movement powered by desktop manufacturing will revolutionize the global economy. Chris Anderson once again reinvents the future in "Makers": a big vision driven by down-to-earth and practical ideas. A must read for anyone who wants to see the leading edge of change."Ã Â Ã¢â ¬â œPeter Schwartz, Co-founder of Global Business Network and author of The Art of the Long ViewÃ Â From the Hardcover edition.

CHRIS ANDERSON is the CEO and co-founder of 3D Robotics, a fast-growing manufacturer of aerial robots, and DIY Drones. He was the editor in chief of Wired until 2012, during which, he led the magazine to multiple National Magazine Award nominations, as well as winning the prestigious top prize for General Excellence in 2005, 2007, and 2009. In 2009, the magazine was named Magazine of the Decade by the editors of AdWeek. Anderson is the author of the New York Times bestseller The Long Tail and Free: The Future of a Radical Price. He lives in the San Francisco Bay Area.

This book starts off with a story on the authorÃƒÂ¢Ã â ¬Ã â„¢s grandfather, a successful engineer and immigrant from the old country. The author tells the tale of how, many, many years ago an innovator had to not only come up with a successful idea but, more importantly, due to capital requirements stemming from a large number of factors (i.e., high fixed costs involved in manufacturing in particular), had to find a ÃƒÂ¢Ã â ¬Ã Å“partnerÃƒÂ¢Ã â ¬Ã Â• in large business who basically relegated the inventor to the sideline. The most a successful innovator, unless he was from a ÃƒÂ¢Ã â ¬Ã Å“moneyedÃƒÂ¢Ã â ¬Ã Â• family or had connections, was to hand over de

fact control of his invention to a larger partner. Those with even good ideas could never succeed unless they were able to find such partners.Today, according to the author, things have drastically changed. This is so, in a nutshell, for two reasons. One is that manufacturing technology has advanced to the point, cost wise and in terms of user friendliness, where production runs can be relatively small and yet still be (relatively) cost efficient. There is no longer, as in the past, the required use of very expensive molds, etc. that would make small production runs prohibitively expensive. The author discusses the main tool that enables this, the 3D printer, as well as electronic kit components. He spends quite a bit of time discussing this technology (for example the large variety of 3d printers and how they work and with what they work [plastic, wood, metal, etc.]). For the engineer working in the field or even the enthusiast this is not very enlightening. However, for the layman who is interested (either in terms of just curiosity or considering actually bringing a project to life), this would be very enlightening.The author then goes on to discuss the business model that can best be used, in his opinion, to bring to market an idea that requires manufacturing and/ electronic components and know-how. That model is the ÃƒÂ¢Ã â ¬Ã Å“open sourceÃƒÂ¢Ã â ¬Ã Â• model. The author describes the many benefits of this model. This includes (not all inclusively) free labor and ideas provided by potential or actual users, the creation of ÃƒÂ¢Ã â ¬Ã Å“word of mouthÃƒÂ¢Ã â ¬Ã Â• marketing, testing the size of the market to see if it is large enough to justify entry, etc. All of this is interesting. However, there are problems with that the open source model has that the author leaves unsaid. I do not know if this is willful or whether he just believes that some of these potential problems are not at all significant. A major one is that the use of volunteers, as opposed to employees, insures that people are supplying the needed know how throughout the entire product development and manufacturing phase. After all, employees need to work to be paid. Volunteers, on the other hand, can just leave or stop in an instant. In many cases without a seconds notice. Anyone who has worked in volunteer organizations knows this. In the authorÃƒÂ¢Ã â ¬Ã â„¢s model this is even more of a problem as the volunteers are linked via the internet and do not even know each other. This puts a significant dent on projects that have development phases that are more than very short periods of time. A big problem, even if the author does not mention it.The author also discusses financing. He again emphasizes internet based ÃƒÂ¢Ã â ¬Ã Å“open sourceÃƒÂ¢Ã â ¬Ã Â• as opposed to more traditional ÃƒÂ¢Ã â ¬Ã Å“angelÃƒÂ¢Ã â ¬Ã Â• investors (whose use would imply capital dilution) or bank financing that would require capital being tied up as collateral and interest payments. However, the author does not point out how difficult it is to use Kickstarter and similar internet sources to raise capital. They are not the panacea he makes them out to be.The author then

provides 3 case studies that show how effectively the open source manufacturing and financing model can be used to help start up entrepreneurs. All show how successful the model has been. Unfortunately no statistics are provided regarding the percentage of entrepreneurs for which this road has been successful (as opposed to failing them or the use of more traditional methods such as partnering with large companies or ÃƒÂ¢Ã â ¬Ã Å“angelÃƒÂ¢Ã â ¬Ã Â• investors).In short, the book has plenty of weaknesses. However, it also has plenty of strengths, especially in regard to small entrepreneurs interested in bringing their idea to market. For this reason alone it is worth reading by such people or even by those with just a passing curiosity.

I found this book to be very interesting and full of a lot of insight. The author touched on a variety of relevant topics in manufacturing, automation, and the maker movement. The information presented throughout the book is very relevant in today's market. The author explains his personal global relationships with manufacturing companies around the world, and how the internet was responsible for making all that happen. I was impressed with his relationship with Alibaba - especially before the US IPO listing just this past month for Alibaba. This book is not about the 3D Printer Industry. This book is over the manufacturing industry and how we are in the middle of another technology shift that with the assistance of automation allows the human race to do so much more then ever before. Also, this book points out there are better technologies currently being developed in the 3D printing space that will change the way 3D Printing is performed. Allowing us to do more than ever before. I really enjoyed reading this book and would recommend it to anyone who is interested in the maker movement.

Overall, a very interesting glimpse in the future of industry. What seems to be of even greater import than the rise of 3D Printers and laser cutters is the rise of open source design and crowd funding when it comes to increasing innovation and lowering costs to market. Most of the business models Anderson details (except for Square and Alibaba) are focused on niche hobbyist industries, but it's possible to see these DIY business models becoming more mainstream.

The maker movement is something I had heard of, but was generally unfamiliar with. The extent of my knowledge about this before reading the book was watching a couple videos of 3D printing, and knowing of advances in robot technology to enable the move towards mass bespoke at companies like Tesla Motors (sidenote: Elon Musk really is the man, If you don't know who he is go Google him immediately!)Learning more about rapid prototyping tools, and how people have taken advantage of

them was enlightening. The analogy of "the long tail of things" (i.e. atoms) following in the footsteps of the long tail of digital goods (i.e. bits) was a very interesting way of examining the rising maker movement. To use a personal example, it certainly left me feeling there is no excuse for me to not try to get a prototype made for an idea I have for a new kind of iPhone case (the innovation I have in mind is more practical than aesthetic). This book has given me a clear path as to how I could go about doing so even with my limited savings.The only real criticism I have is that at times the book felt rushed/redundant. What a CNC machine is and how it works was repeated at least three times. While this may have been on purpose I imagine it is something that will be fixed in future editions. Kind of funny to have such a "macro level" error to be in a book written by the former editor of a magazine esteemed as Wired is.

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