

Crossing the maker chasm

César García - La Hora Maker
iProduce online event - 26/11/20

Educación **STEAM** con **Nettrice** **Gaskins**



Beach Lab

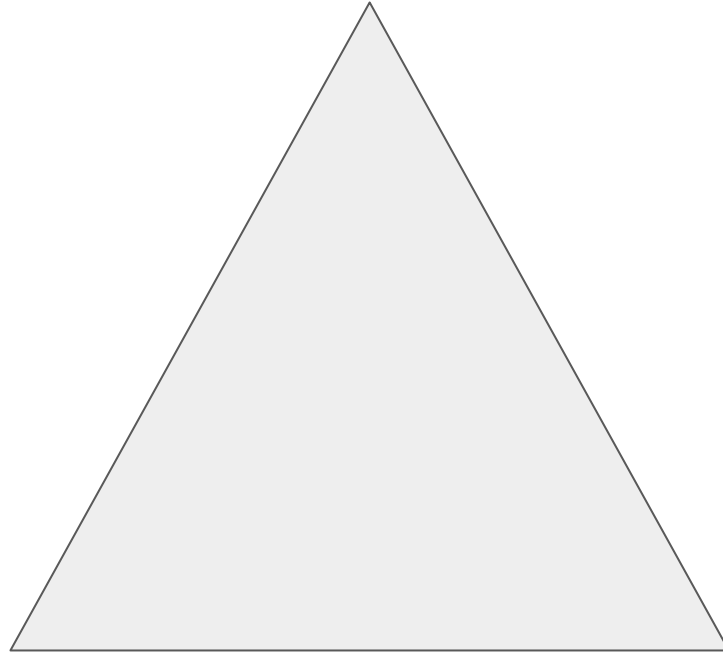
Fablab sobre ruedas



con
**Francisco
Sanchez**



Consumers



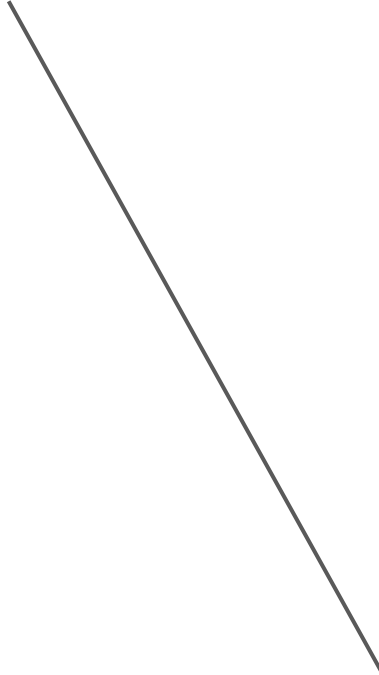
Makers

Manufacturers

Consumers

Makers

Manufacturers



The need for
something not
available already



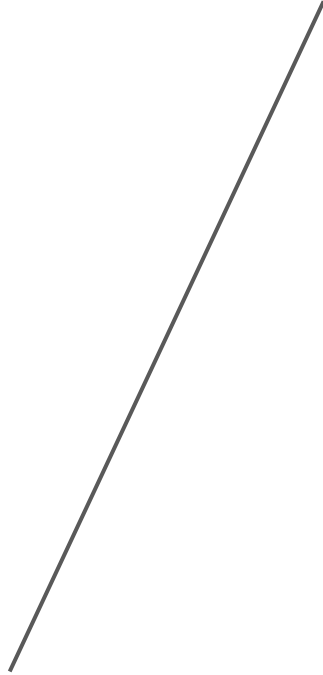


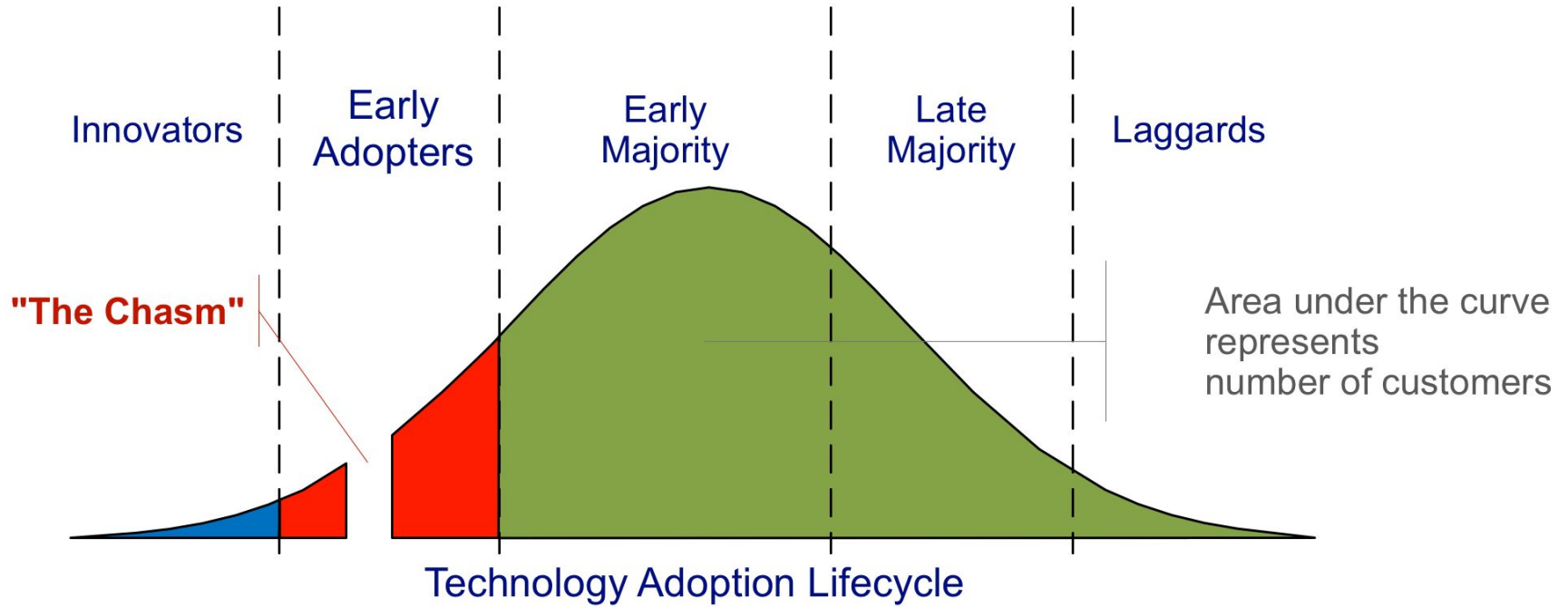
gate

Consumers

Makers

Manufacturers





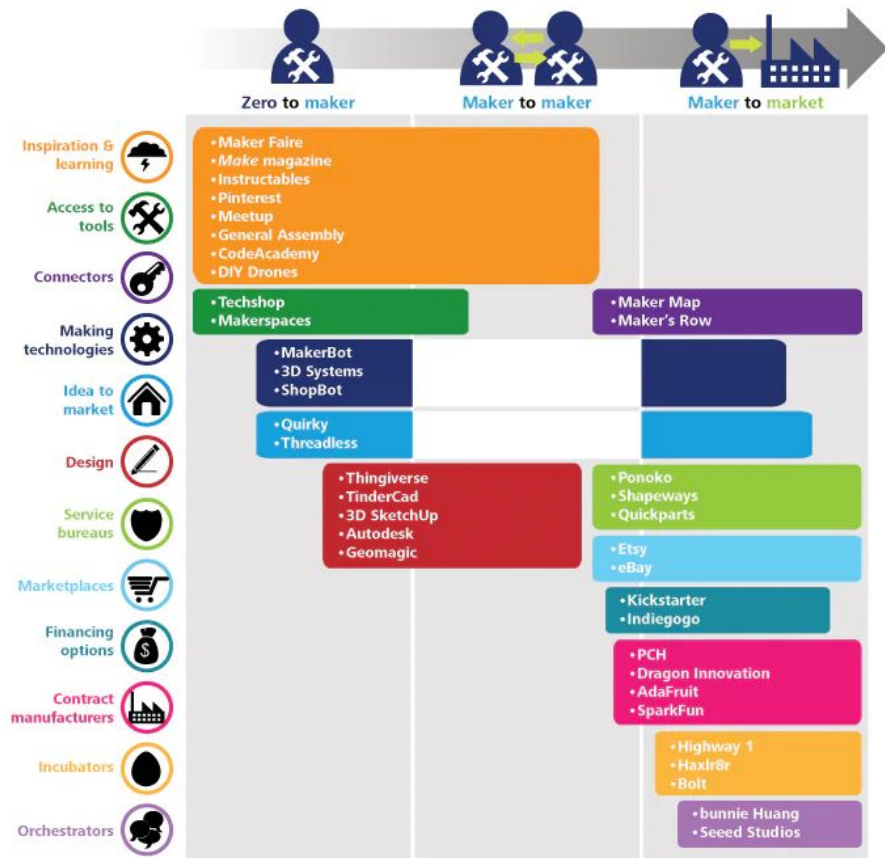
Who is “the maker”?

A movement in the Making - Deloitte Center for the edge

- Zero to maker
- Maker to maker
- Maker to market

Figure 2. Some representative players in the maker ecosystem

Many of these entities play multiple roles in the ecosystem. The roles are evolving, and new entrants emerge daily.



A prosumer?

An inventor?

A small manufacturer?

A hobbyist?

An aspiring
entrepreneur?

A young designer?

An experienced
engineer?

A specialist in textiles?

There is no “the maker”

Maker collectives
around a common
project

A word cloud featuring various terms related to creativity, innovation, and DIY culture. The words are arranged in a dense, overlapping manner. The largest word is 'Creatividad' in the center. Other prominent words include 'Compartir' (orange), 'Innovación' (large black), 'Comunidad' (large black), 'Aprender' (orange), 'Crear' (large black), 'Digital' (large black), 'Fabricación' (orange), 'Tecnología' (large black), and 'DIY' (large orange). Smaller words include 'Autonomía', 'Experimentación', 'Desarrollo', 'Generosidad', 'Autosuficiencia', 'Colaboración', 'Diseño', 'Autoaprendizaje', 'Arduino', 'Curiosidad', 'Descubrir', 'Prototipo', 'Empoderamiento', 'Hobbista', 'Educación', 'Pasión', and 'Impresión'.

Comunidad Autosuficiencia Colaboración
Autonomía **Impresión** Diseño
Autoaprendizaje Experimentación **Aprender**
Desarrollo Generosidad
Creatividad
Arduino Curiosidad **Tecnología**
Compartir Descubrir
Prototipo **Crear**
Empoderamiento Hobbista
Pasión **Fabricación** Educación **Digital**
Innovación **DIY**

Coronavirus Makers

- Creating solutions against Covid-19
- Emergent organization
- Powered by volunteers' efforts



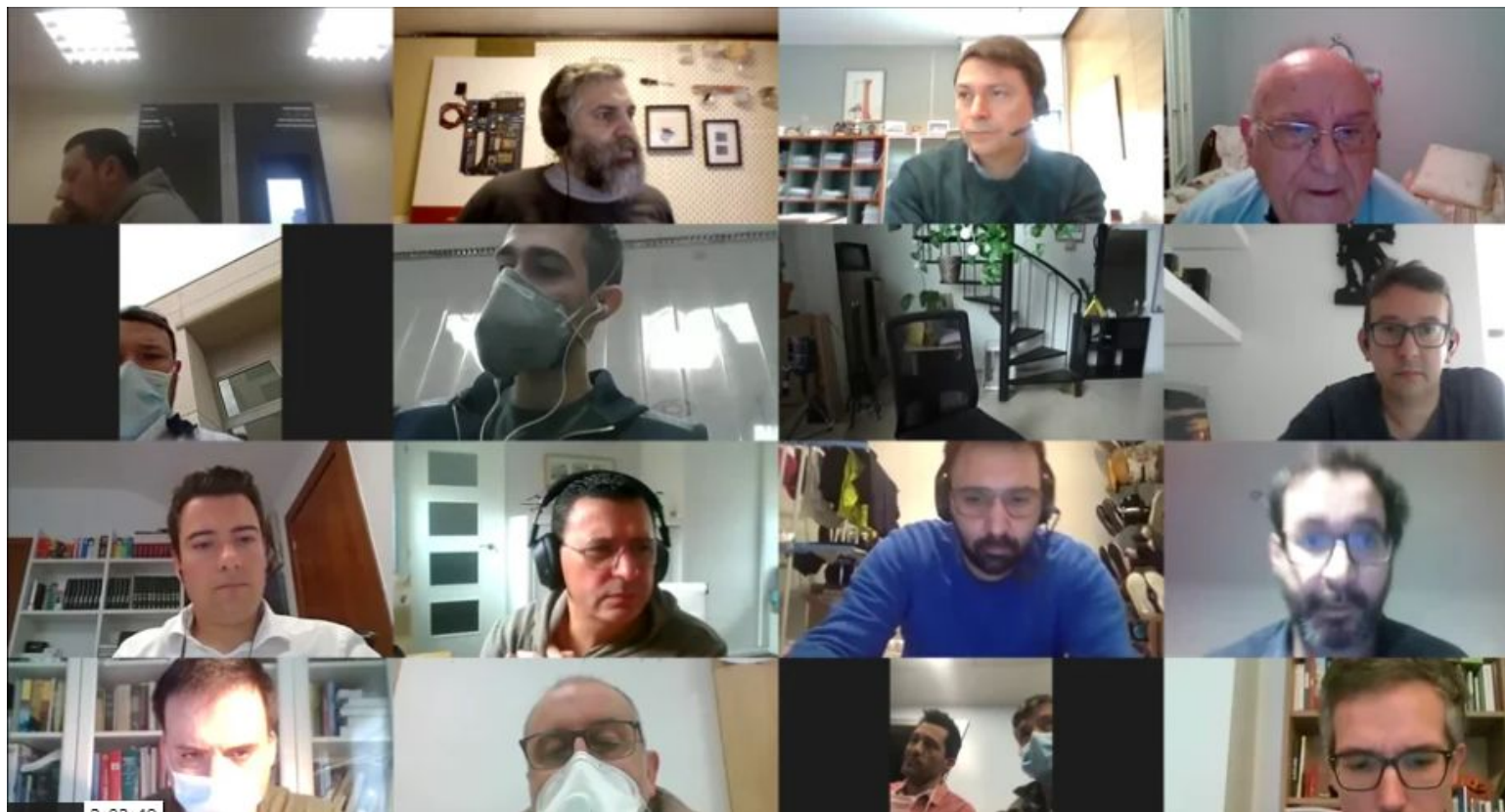
Diffusion shortfall in Free Innovation - Von Hippel

Three market failures:

- Reduced general value of free innovators' developments
- Suboptimal investment in design
- Low diffusion effort by free innovators



Vertical institutions - Professional associations



Transversal institutions - COTEC Foundation



New institutions - MasQueMakers

Consumers

Makers

Manufacturers





Existing ecosystems - 3D filament providers, transportation, etc.

Image by Adafruit Industries - CC BY-NC-SA 2.0



Reesistencia Team - Reespirator



Domain experts

Challenge: Different
mindsets!

Do not harm vs

Let's prototype solutions!

Value co-creation in open innovation is driven not only by actors' value creation but also by **their ability to capture value**

Open Innovation concept
Henry Chesbrough

In the social sciences, the **free-rider problem** is a type of **market failure** that occurs when **those who benefit from resources, public goods** (such as public roads or hospitals), or services of a communal nature do not pay for them^[1] or under-pay. [...]

Additionally, it has been shown that despite evidence that people tend to be cooperative by nature, **the presence of free-riders cause this prosocial behaviour to deteriorate**, perpetuating the free-rider problem.^[3]

Source: https://en.wikipedia.org/wiki/Free-rider_problem

“There is an open
source design already
available!” syndrome

ICU-grade LibreMask

An open source aerosol filtering mask with filtering efficiency greater than N95/FFP2, using standard breathing filters used in ventilators and available in hospitals ^[1]. LibreMask is intended to be used by health care workers in high-risk environments.

What is LibreMask?

LibreMask is intended to be an ICU grade mask that uses breathing filters, HMEs and HMEFs filters in order to achieve a filtering efficiency superior to N95 or FFP2 masks.



LibreMask current version with breathing filter

LibreMask - Open source mask for doctors

GNU General Public License v3 - No warranty

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

GNU General Public License v3 - No liability

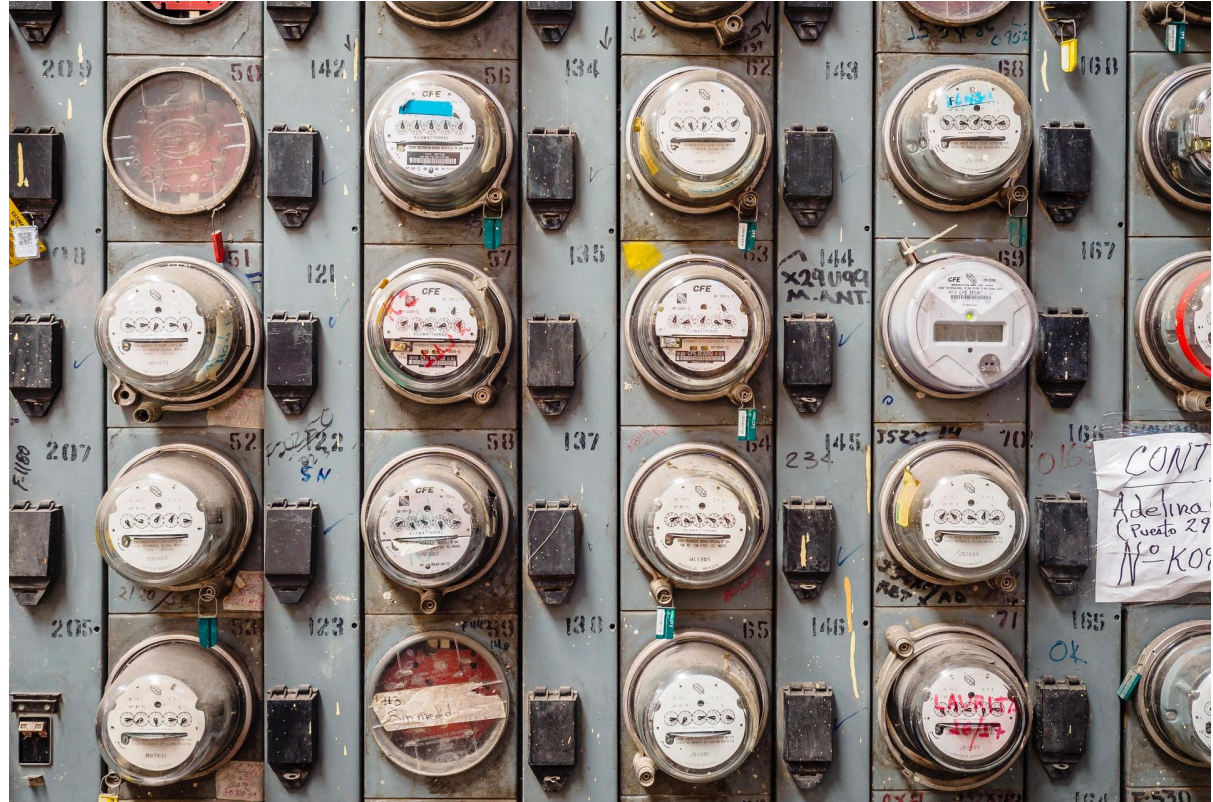
16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

How do you check for
quality control?

DIY Quality Check

- Create procedures
- Create checklists
- Offer peer support for new members
- Scale as the group grows



How does society check for
quality control?

Provide standards like
United Kingdom for
ventilators

What can we ask our
public bodies?
First, let's clarify roles!

Impulse or swallow
existing movements?

Avoid “not invented
here” syndrome

Open questions

Open questions for the future

- How do we make standards available for makers so they don't have to start from scratch?
- What should be the relationship between existing maker institutions and emergent maker groups?
- How can we follow as a society the track of new projects so we don't have to start from scratch next time?
- How should we take maker projects to market? What steps needs to be taken regarding liability, risk and profit?

Thanks for your
attention!