



/04 POLLUTION PROTECTION WITH O2O2

HOW DO WE COMMUTE AND EXERCISE IN CITIES CHOKED BY POLLUTION?

THE CHALLENGE: MORE THAN NINE OUT OF TEN PEOPLE AROUND THE WORLD LIVE IN CITIES WHERE AIR POLLUTION EXCEEDS SAFE LIMITS.

While many world issues are constrained by national borders, air pollution is a problem that knows no boundaries. It affects practically all countries in the world, all parts of society and has become a growing concern as a result of mass urbanization and industrialization. To date, air pollution – both ambient and household – is the biggest environmental risk to health, carrying responsibility for about one in every nine deaths annually (around 11.6% of deaths annually - more than the number of people killed by HIV/AIDS, tuberculosis and road injuries combined.) Ambient (outdoor) air pollution alone kills around 3 million people each year, mainly from noncommunicable diseases. Aggregated with household (indoor) pollution data, this number rises to 6.5 million deaths per year. Shockingly, more than nine out of ten people around the

world live in cities where air pollution exceeds safe limits (within the WHO Air quality guidelines¹): it is clearly a public health emergency and has been identified as a global health priority in the UN sustainable development agenda.

Interventions and policies - such as the WHO global response framework - for tackling air pollution issues exist and have been proven to be effective, but more efforts need to be made. As this is an issue that affects everyone around the world, more solutions need to be devised—and not only by governmental organizations but also by the private sector. These partnerships need to happen in order to maximize the co-benefits of health, climate, environment and social development. Moreover, tackling such a ‘wicked problem’ as air pollution will also require large behavioral shifts at the consumer’s level.





**AIR POLLUTION—
BOTH AMBIENT
AND HOUSEHOLD
—IS THE BIGGEST
ENVIRONMENTAL
RISK TO HEALTH,
RESPONSIBLE
FOR MORE THAN
ONE IN EVERY
NINE DEATHS
ANNUALLY.²**

11.6%

Of all global deaths are
caused by pollution

300m

Children live in areas with the most
toxic levels of outdoor air pollution

\$225b

The global economic cost of
air pollution each year

6.5m

Deaths per year from air pollution
related diseases around the world each year

92%

Of the world's population lives in places
where air pollution exceeds safe limits

THE SOLUTION.



WHAT.

O2O2 allows active urbanites in polluted megacities like Beijing and London to reclaim their outdoor lifestyles and commute and exercise without fear of breathing highly polluted air.

HOW.

O2O2's facewear uses advanced nano-fiber technology to clean and filter air, protecting the user while providing unparalleled comfort, performance, and style.



HEADQUARTERS
New York City
Founded 2016



FOUNDERS
Dan Bowden
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TAGS
Air Pollution
Health
Facewear



LINKS
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A CONVERSATION WITH O2O2

What inspired you to start O2O2?

All three founders experienced air pollution and the failures of the current technology separately. Jerry wore masks and respirators on a daily basis and knew deeply of the discomfort and flaws in the technology from a user's perspective. I (Dan) was living in London and was aware of the little recognized public health crisis caused by air pollution. While experts estimate there are some 10,000 deaths every year in the UK from air pollution, there was a paucity of information to enable community understanding and create a personal connection to the issue. Finally, for Ilya, the issue was more personal. Ilya's family faced serious health problems while in China and in his case the issues were so bad they triggering a move to New Zealand.

As products offered to the market have not fundamentally changed since the 1960s, we believed there was an opportunity to leverage the emerging properties of nanofibers, recent advancements in battery technologies and advanced computer modelling to create a new solution for those at risk of air pollution

What is your main mission?

O2O2's mission is to empower our community to enjoy their cities again without the fear of air pollution. By virtue of being a powered device with the integration of sensors, we will also collect invaluable data on personal health and on the environment, diagnosing health issues and optimising exercise regimes.

How did being part of the URBAN-X ecosystem help you to grow and develop your initial idea/product and deal with the roadblocks you have faced so far?

We walked into the doors of URBAN-X with a Tupperware container, some patents and a few very rough prototypes. We



“OUR SOCIAL STRATEGY IS CLOSELY LINKED TO OUR ENVIRONMENTAL ONE.”

—Dan Bowden,
Co-Founder of O2O2

walked out with an engineering proof of concept, a product which was validated to an academic level, some amazing partners, a network of contacts and lasting friendships. For us URBAN-X was the catalyst for our business and opened doors which were otherwise closed to a company of our size and maturity. I personally found it invaluable to be in an environment of creativity and new thought.

What's next for O2O2?

We are now taking our engineering prototype to a consumer product, reducing the product's weight, battery efficiency, aesthetics & connectivity. Partnerships which will help us create size and scale. In the longer term we are integrating sensors which will create personal and environmental data.

What are the main risks you are facing in the future and how can they be mitigated?

O2O2 has an amazing global opportunity at hand, but with hardware and a desire to become a full stack solution comes a lot of challenges. Some examples are the immense scope of opportunity, copycats, scaling and the challenges that come with targeting the Chinese market.

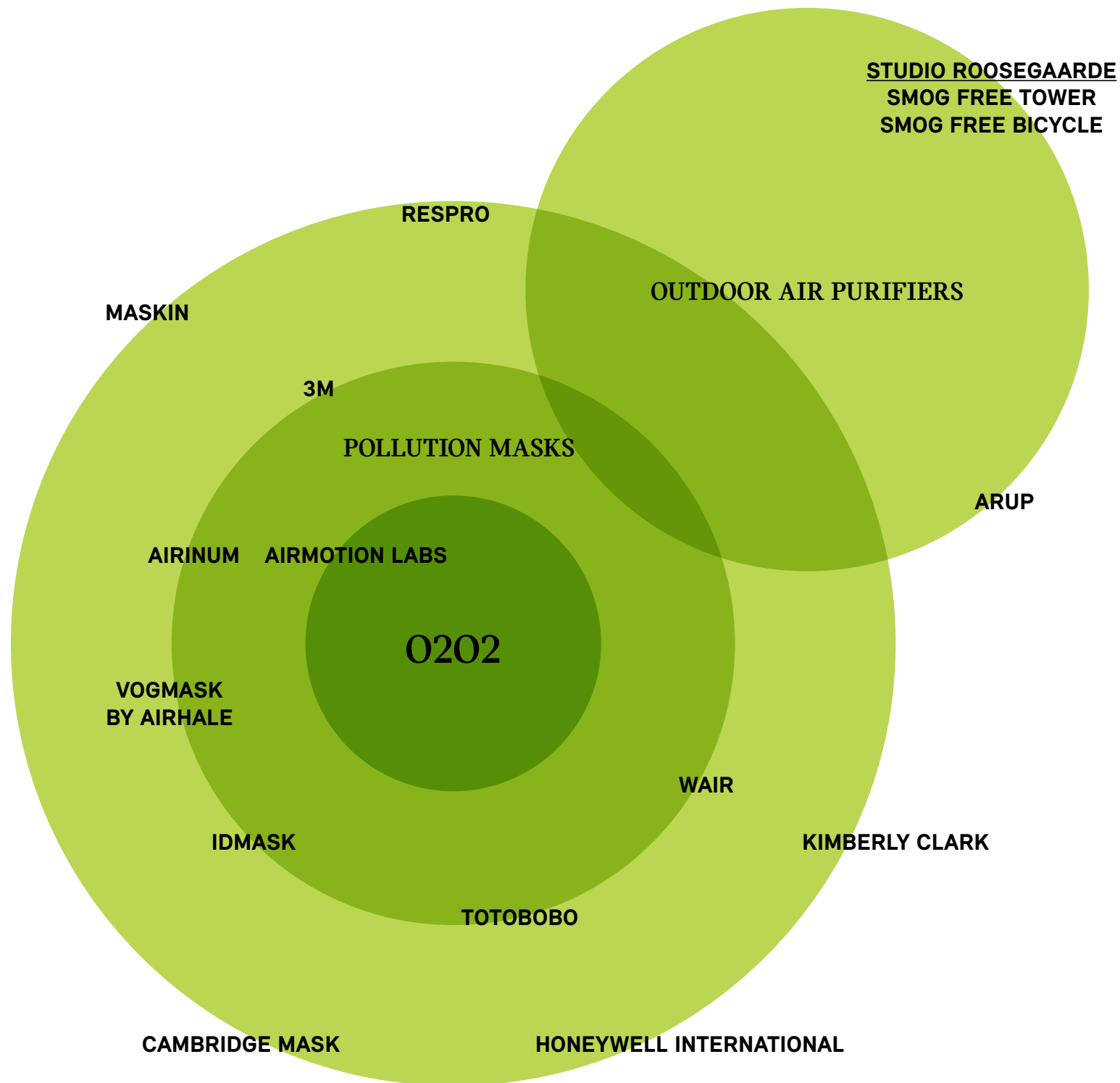
In light of these challenges, we are making sure we are enjoying the ride which is important to keep you motivated, passionate and gives us some perspective on what we are trying to do.

There aren't many companies proposing new pollution-filtering wearables and what O2O2 is developing is a radical shift away from the white paper masks we have in mind when we think of such products - how difficult will it be for O2O2 to overcome behavioural barriers and convince people to actually wear such futuristic masks?

Firstly, we need to identify the right audience. O2O2 has to focus on people who already wear masks or respirators, and will be looking to engage with those who are already frustrated with the products on the market and have a chronic need. Within this group we have to find those early adopters - the young, educated, tech natives who don't look backwards but look forward, they want to be out and enjoying their city. We believe we have identified this market with the 20-30yr old Chinese and will design our product and whole user experience for them.

As an educated target market we do require external validation, which is why we have a partnership with AUT in place. We have a special weapon in that by virtue of being a powered device we are able to also provide the user with live feedback.

COMPETITIVE LANDSCAPE.



POLLUTION MASK & AIR FILTERING MARKET.



INVESTMENT LANDSCAPE.

	CAMBRIDGE MASK	AIRINUM	WAIR
HQ	UK, Beijing, & Hong Kong	Stockholm, Sweden	France
WEBSITE	cambridgemask.com	airinum.com	wair.fr
EMPLOYEES	11-50	1-10	1-10
FIRST FUNDING/ FOUNDING DATE	Founded 2015	Founded 2015	Crowdfunded 2016
VC-BACKED	yes	yes	No, currently raising \$2M round
TOTAL FUNDING	unknown	\$387.96k in 2 Rounds	Crowdfunded: 497 contributors, €34,666, 231% of their goal
# INVESTORS	Kickstarter campaign and Y Combinator	1	
LAST ROUND	2016 Y Combinator	\$352k Venture on 6/7/16	Crowdfunding campaign 12/4/16
INVESTORS	Y Combinator	Propel Capital, part of STING accelerator	

KEY PLAYERS TO WATCH.

AIRINUM

COMPANY PROFILE.

Founded in 2015 in Stockholm, Sweden, Airinum produces customizable pollution-filtering breathing masks.⁵ Like O2-O2, Airinum aims to be functional and fashionable and by providing a mask that has removable filters, Airinum sets itself apart from its industrial-mask and other cotton-mask competitors such as Vogmask and Cambridge Mask.

LESSONS TO BE LEARNED.

Airinum's emphasis on style and its customizable option has really set a new trend in the pollution mask market.⁶ Producing re-usable masks has also changed behavior of mask wearers who see the value in purchasing a more expensive product that lasts over a longer period of time. These two elements have been key in the conception of O2O2's mask.

STUDIO ROOSEGAARDE.

COMPANY PROFILE.

Studio Roosengarde is a social design lab which develops projects that merge technology and art in urban environments. Roosegaarde's "Smog Free Project" consists of a tower that cleanses the air nearby, using positive ionization. The Smog Free Bicycle concept was introduced in 2017 to be part of Smog Free Project, and will be developed with ofo a Beijing-based bicycle sharing company.⁷

LESSONS TO BE LEARNED.

The studio's innovative approach to air pollution through its Smog Free Tower and Smog Free Bicycle projects are changing public perceptions and raising awareness about the importance of clean air, which are key steps to selling products in this nascent market.⁸

⁵Crunchbase. 2017. Crunchbase. [ONLINE] Available at: <https://www.crunchbase.com> [Accessed 14 August 2017].

⁶AngelList. 2017. AngelList - Where the world meets startups. [ONLINE] Available at: <https://angel.co>. [Accessed 14 August 2017].

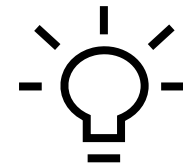
FOOD FOR THOUGHT.



MARKET INSIGHT.

While indoor purification systems (such as Dyson air purifiers, whose sales have more than tripled in China since 2015) have until now trumped outdoor air pollution filtering products, changing perception and rising public awareness have definitely created room for new entrants in the market.

The top funded companies in the air pollution market are either monitoring and gathering data about pollution or selling purification technology for indoor and industrial applications. This could signal an opportunity for a well-marketed product merging new technologies with protection from pollution.



OPPORTUNITY.

The more established players in the pollution mask market provide very little and unpractical choice, often dysfunctional systems and do not take into account the importance of creating fashionable masks.

O2O2's success product depends on increasing demand through policy requirements and awareness campaigns, including awareness of air pollution itself and the ineffectiveness of cheap, poor-fitting products.



WHY O2O2?

While all known competitors use filters, none use O2-O2's air pressure technology, which permits better fit, more comfort, better protection, better style and more durability. O2-O2's smart mask also gathers air quality data from its masks, a function that sets it even further from its competitors who still rely on simpler cotton filter masks.

APPENDIX & REFERENCES.

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IMAGE CREDITS.

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