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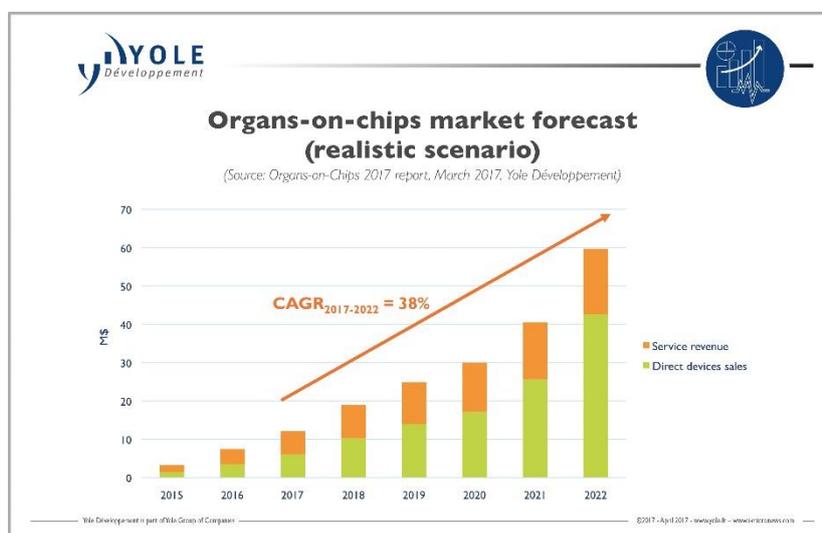
### Organs-on-chips: small market and gigantic promise

Organs-On-Chips 2017 report – Yole Développement – April 2017

**LYON, France – April 12, 2017:** “Currently worth a few million dollars, the emerging organs-on-a-chips market has the potential to become a multi-billion dollar market”, announces **Sébastien Clerc, Medical Technologies Analyst at Yole Développement (Yole)**. Pioneers started the development of organs-on-chips around 2000 but really accelerated only after 2010 thanks to government initiatives substantial funding and rising awareness. Yole’s MedTech team is announcing today a real market, in its new technology & market analysis titled [Organs-on-a-chips](#).

Under its new report, Yole explains the challenges linked to drug discovery and the limits of the current process. Yole’s analysts provide a detailed introduction about organ-on-chip technology and propose an overview of history from first developments to nowadays, along with a presentation of main players and their respective technologies. The combined organs-on-a-chips devices and services markets reached US\$7.5 million in 2016 and Yole presents different scenarios between 2017 and 2022 with 38-57% CAGR<sup>1</sup>.

What are the main technical challenges and business opportunities? What do end-users expect? How will the industry be impacted? How will the regulatory landscape evolve?... Yole offers you an overview of this dynamic industry.



<sup>1</sup> CAGR : Compound Annual Growth Rate

Under its new technology & market report, [Organs-on-a-chips](#), Yole confirms the still small size of the market with very few players already in the production and commercialization phase. Most companies are spin-offs from universities' labs and are currently improving their organs-on-chips models through an iterative process with industrial players. Pharmaceutical and cosmetics companies are eager to test different organs-on-chips solutions to assess which technology is best suited for which type of experiment, but they are conservative and will need time to widely adopt the technology.

Depending on the speed of adoption, and on the ability of organs-on-chips companies to overcome technical challenges and to upscale production, Yole's analysts detail different scenarios (realistic – optimistic) in which the market could grow at different compound annual growth rates to reach US\$60 million- US\$117 million by 2022. And this is only a first step. *“There is no doubt such technologies have the potential to become a multi-billion dollar market in the mid- to long-term future given the billions of dollars they could help the industry to save every year”*, comments Sébastien Clerc from Yole.

Ethical concerns are also at the heart of this new market: more than one hundred million animals are used in laboratory experiments worldwide every year, and could be replaced by pieces of microfluidic technology.

But will this happen?

*“Increased media coverage and significant enthusiasm from the technology developers should not hide the significant barriers to technology adoption”*, says **Marjorie Villien, Technology & Market Analyst at Yole**. Meanwhile, industry and governmental agencies have placed huge expectations on a few developers of organs-on-chips technologies which were awarded substantial funding.

Yole's MedTech team proposes an analysis of what the consequences could be for the whole industry if these players were to fail. However, it is highly probable that the investments will continue, with large pharmaceutical and cosmetics companies starting to use organs-on-chips. L'Oréal, AstraZeneca, Roche and Sanofi among others, already have partnerships with organs-on-chips developers and believe the technology will change the efficacy and toxicology testing landscapes for both existing and being developed products.

The [Organs-On-Chips 2017](#) report presents a comprehensive understanding of the current technology limits and how it may evolve in the coming years. It also makes a focus on organ-on-chip technical aspects (source of cells, different types of platforms, importance of pumping systems, materials and manufacturing techniques...) and provides comprehensive market overview. A detailed description of this report is available on [i-micronews.com](http://i-micronews.com), [MedTech reports section](#).



### About [Organs-On-Chips 2017 report](#)

Currently worth a few million dollars, the emerging organs-on-chips market has the potential to become a multi-billion dollar market.

#### Authors:

**Sébastien Clerc** is a Medical Technologies Analyst at Yole Développement, the “More than Moore” market research and strategy consulting company. After graduating from Grenoble INP with a Biomedical Technologies Master degree, he completed his training with a Master degree in Innovation and Technology Management, during which he oversaw strategy and marketing.

As a Technology & Market Analyst, **Marjorie Villien** is member of the Microfluidic & Medical Technologies (MedTech) business unit at Yole Développement, the “More than Moore” market research and strategy consulting company. She is a daily contributor to the development of MedTech activities with a dedicated collection of market & technology reports as well as custom consulting projects. After spending two years at Harvard, Marjorie served as a research scientist at INSERM in the field of MRI & PET imaging. She has spoken in numerous international conferences and has authored or co-authored 11 papers and 1 patent. Marjorie Villien is graduated from Grenoble INP and holds a PhD in physics & medical imaging.

#### Companies cited in the report:

Aline Inc., Alnylam, AlveoliX AG, Amgen, Amore Pacific, Ananda Devices, Astellas, AstraZeneca, AxoSim Technologies, BASF, Beiersdorf (Nivea), Bioclinicum, Biogen, Boehringer Ingelheim, Boston Pharmaceuticals, Bristol-Myers Squibb, CFD Research Corporation, Cleveland clinic, CN Bio Innovations, Centre National de la Recherche Scientifique (CNRS), Columbia University, Cornell University, Covance, Corio Chips, Defense Advanced Research Projects Agency (DARPA), Draper, Elveflow, Emulate Inc., ETH Zurich, Fluigent SA, Galapagos, GlaxoSmithKline (GSK), Harvard Apparatus, Harvard Medical School, Harvard University, Hesperos, Hurel Corporation, Institute for human Organ and Disease Model Technologies (hDMT), InVivo Scientific, Janssen Johnson&Johnson, Jena University Hospital, Knight Cancer Institute, Korea University, LabCorp, L’Oréal, Merck, MicroBrain Biotech, Microfluidic ChipShop, Micronit, Mimetas, Massachusetts Institute of Technology (MIT), McGill University, Multiscale Biomedical Engineering Laboratory (MBEL), National Center for Advancing Translational Sciences (NCATS), National Eye Institute, National Institutes of Health (NIH), Nikon, Nortis Bio, Organovo, Oxford University, Pfizer, PhysioMimetics, Roche, Russian Academy of Science, Sanofi, Sciex, Seoul National University, Seres Therapeutics, Sigma-Aldrich, Sony DADC, Stratec, Sun Bioscience, SynVivo, TARA Biosystems, Technical University of Berlin, TissUse GmbH, Tulane University, University of Bern, University of California, University of Central Florida, University of Groningen, University of Toronto, Vanderbilt Institute for Integrative Biosystems Research and Education (VIIBRE), Vanderbilt University, VU Medical Center Amsterdam, Wageningen University, WYSS Institute for Biomedical Engineering, Xona Microfluidics, Yale University...

#### About Yole Développement – [www.yole.fr](http://www.yole.fr)



Founded in 1998, Yole Développement has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services. With a strong focus on emerging applications using silicon and/or micro manufacturing, the Yole Développement group has expanded to include more than 50 collaborators worldwide covering MEMS, Compound Semiconductors, RF Electronics, LED, Displays, Image Sensors, Optoelectronics, Microfluidics & Medical, Advanced Packaging, Manufacturing, Nanomaterials, Power Electronics and Batteries & Energy Management.

The “More than Moore” company Yole, along with its partners System Plus Consulting, PISEO, Blumorpho and KnowMade, support industrial companies, investors and R&D organizations worldwide to help them understand markets and follow technology trends to grow their business.

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