Microfluidic technologies have been around for a while, but only in the last few years have certain applications started benefiting from microfluidic breakthroughs. First, next-generation sequencing (NGS) found new possibilities enabled by microfluidics; next, in 2014/2015, point-of-care (PoC) testing (especially molecular diagnostics for decentralized use) began reaping microfluidic technologies’ full benefits. These applications are still driving the microfluidics industry’s growth and structure.

In this Status of the Microfluidics Industry report, Yole Développement announces a $2.5B microfluidic device market in 2017 and forecasts a $5.8B market by 2022 (CAGR 2017-2022 = 18%). From microfluidic devices like manufactured chips, delivery tools, and dispensers, microfluidic-based products (i.e. diagnostic tests with reagents, vaccines, and cartridges) are provided to end-users, offering numerous possibilities.

The industry’s growth is not surprising, given the high demand from end-users for increasingly automated, integrated, miniaturized solutions. And the microfluidics industry could experience additional growth booms in the next few years. In particular, cancer diagnostics, treatment planning, and follow-up look extremely promising with the increased use of microfluidic technologies at sample preparation level (isolation of circulating tumor cells and DNA in liquid biopsies) and at diagnostics level (molecular diagnostics for oncology for the analysis of these cells and DNA molecules). Organs-on-chips are another microfluidics application with the potential to become a multi-billion-dollar market, enabling more predictive models for drug and compound testing. There is no doubt these emerging applications will drive the market’s continuous growth over the next decade, especially with a myriad of startups emerging and proposing innovative microfluidic solutions to solve today’s and tomorrow’s major issues.
Two types of diagnostics player in 2016

Diagnostics Industry Leaders
Not specialized in microfluidics

Large diagnostics players often get microfluidic technologies through acquisition of smaller specialized companies

Smaller players
Focused on microfluidics

Research, startups: breeding ground for innovation

often acquired by the large diagnostics companies. This was the case for some of molecular diagnostics’ most innovative players: IQuum and BioFire, and more recently Cepheid and Nanosphere, were all acquired by much larger companies. In this context, Yole Développement’s analysts have identified $25B in M&A across the microfluidics industry since 2015. This has created a virtuous circle: the most promising/most successful startups are acquired or become large players themselves, and investors are eager to put money into the ever-growing number of newcomers leveraging microfluidic technologies and know-how.

This report includes a detailed analysis of the $965M invested in microfluidic companies since 2015, as identified by Yole Développement.

THE INDUSTRY’S SWIFT MATURATION HAS PROFOUNDLY IMPACTED THE ENTIRE SUPPLY CHAIN

Microfluidic technologies’ maturation and their increased use within the industry has impacted supply chain structure. Which diagnostics companies are producing their microfluidic devices in-house, which ones are outsourcing, and why? What is the cost of goods sold? Yole Développement’s analysts have investigated these critical points, and their findings are revealed in this report.

Cost pressure is often very high for microfluidic device manufacturers trying to diversify their capabilities in order to generate higher value for their customers. Back-end processing, materials combination and reagent deposition are the points of improvement, rather than manufacturing processes, which have not changed much recently. Depending on the application, different materials are used: polymer, glass, and silicon devices have different properties and are rarely produced by the same players. Low-cost diagnostics disposables are made of polymer, whereas glass and silicon are used in higher-end applications where superior precision and quality are required.

This report furnishes a detailed material mix analysis per application, along with complete supply chain information: who is producing what, and for who?
COMPANIES CITED IN THE REPORT (non exhaustive list)


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The present document is valid 24 months after its publishing date: May 9th, 2017
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