Audio is becoming a key function of multiple existing and new products that increasingly has to be analyzed as a complete landscape compared to independent devices. From mobile phones to cars, from home assistants to drones, audio products like microphones, speakers and audio integrated circuits (ICs) are essential for all the new systems driving consumer electronic markets. The total audio business was worth more than $15B in 2016. With a compound annual growth rate (CAGR) close to 6%, in 2022, the audio device market will be worth $20B and become a key feature in all the applications it is involved in. And there’s clearly room for more added value in the audio supply and value chain, as well as other significant changes.

In 2016, Yole Développement estimates that the MEMS microphone market has almost reached the $1B milestone, with a value of $993M. Combined with the $700M electret condenser microphone (ECM) market, now the acquisition of sound is almost a $2B value market. The µspeaker market is estimated to be worth $8.7B (meaning speaker less than two inches in diameter). In addition to these two visible elements of the audio chain, the audio IC market, which includes codecs, digital signal processors (DSPs) and amplifiers, is estimated to be worth $4.3B in 2016.

This new Yole report describes the evolution of the three audio functions, microphones, speakers and audio ICs, technical trends, as well as the evolution of the strategies of the main players to capture a larger part of this fast-growing field.

The market for MEMS microphones and ECMs, micro-speakers and audio ICs will be worth $20B in 2022.
ACOUSTIC MEMS AND AUDIO SOLUTIONS

The microphone market since 2005

(Yole Développement, April 2017)

better audio quality are driving adoption, in addition to evolution of the existing technologies.

Between the microphone and the microspeaker, codecs, DSPs and amplifier audio ICs play a key role. This is where there is a huge battle in the smartphone and wearable industries to get access to functions. Audio IC suppliers and audio processing unit providers are hunting the best added value. Audio IC suppliers like Cirrus Logic, Realtek and Maxim Integrated are bringing added value through discrete components and highly valuable algorithms. Audio processing unit (APU) providers like Qualcomm, HiSilicon and Apple are trying to absorb this value by integrating audio ICs in the design of their application processor. Drawbacks and advantages of both solutions can be discussed but the future of audio ICs is currently undergoing deep changes. Yole Développement estimates that the audio IC market will be worth more than $4.3B in 2016, reaching $6B by 2022.

This report describes the applications, technologies, and players associated with the microphone, microspeaker and audio IC market's impending changes.

A MARKET TARGETED BY GIANTS

Since the early 2000s the microphone MEMS die market has been dominated by two giants. Infineon and Sony supplied more than 4 billion die chips last year to the top three MEMS microphone suppliers: Knowles, Goertek and AAC. This represents more than 70% of the market. This ranking has been established for a few years, but the market shares have been shifting quite rapidly. Knowles has been the undisputed leader since 2003, but is now challenged by its Chinese competitors Goertek and AAC, who are particularly aggressive on price and delivering products with improving performance. Newcomers like VesperMEMS are on track to take share in this market thanks to performance that is well suited for growing markets like wearables and mobile. At the other end of the audio chain, the microspeaker market is quite fragmented. There are lots of players, coming mainly from Asia, with several companies being both involved in microphone
and speakers like AAC, Knowles, Goertek and others. New applications like wearables, headsets and portable sound systems are opportunites for new entrants like Audiopixel and USound to introduce their MEMS technologies and disrupt a market looking desperately for innovation. The audio IC company landscape is also experiencing profound changes. This includes M&A and deeper involvement of system makers, especially in consumer electronics, which brings players like Apple, and giants like Qualcomm and HiSilicon to integrate the added value into their devices, which squeezes the specialized IC makers.

This report provides a detailed vision of the player landscape, as well as an analysis of the value flow through the audio chain, which companies can win and the evolution of the total audio landscape that we can expect for the next five years.

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

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(1) Our Terms and Conditions of Sale are available at www.yole.fr/Terms_and_Conditions_of_Sale.aspx
The present document is valid 24 months after its publishing date: April 27, 2017
Definitions: “Acceptance”: Action by which the Buyer accepts the terms and conditions of sale in their entirety. It is done by signing the purchase order which mentions “I hereby accept Yole Développement’s terms and conditions.”

“Buyer”: Any business user (i.e. any person acting in the course of its business activities, for its business needs) entering into the following general conditions to the exclusion of consumers acting in their personal interests.

“Contracting Parties” or “Parties”: The Seller on the one hand and the Buyer on the other hand.

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