

# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

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### IoT strategy eludes industry

In building out the Internet of Things, the world is undergoing a transformation on a scale similar to the Industrial Revolution, essentially a fourth wave of the Internet when nearly everything will be connected.

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### Nikkiso acquires AqiSense

Two companies to combine their UV-C LED disinfection products  
AqiSense Technologies, a maker of UV-C LED disinfection systems, has been acquired by Nikkiso America in a cash deal.

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### AMD, Nvidia GPU Battle Heats Up

The first battles between AMD's Polaris and Nvidia's Pascal are now being waged, but it's too early to tell who will win the war of the new graphics processors.

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### Toyota Partners with Taxi for Automated Driving

Toyota Motor Corp and the Japan Federation of Hire-Taxi Associations (JFHTA) have entered into a memorandum of understanding for the development of autonomous driving technologies.

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– 14 November 2016 – London UK

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### AMD's Zen Takes on Intel

Last night, AMD demonstrated an eight-core, dual threaded 3 GHz desktop chip using its new Zen core narrowly edging out a similar high-end desktop CPU from archrival Intel.

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Future Horizons Ltd, • 44 Bethel Road • Sevenoaks • Kent TN13 3UE • England

Tel: +44 1732 740440 • Fax: +44 1732 740442

e-mail: [mail@futurehorizons.com](mailto:mail@futurehorizons.com) • <http://www.futurehorizons.com/>

Affiliates in Europe, India, Israel, Japan, Russian, San Jose California, USA

## **IoT Strategy Eludes Industry**

In building out the Internet of Things, the world is undergoing a transformation on a scale similar to the Industrial Revolution, essentially a fourth wave of the Internet when nearly everything will be connected.

The early Internet was a collection of documents. Websites served as online brochures or billboards. The second wave was an Internet of commerce when companies such as eBay and Amazon landed tens of billions of dollars in online sales. With the arrival of social media, the third wave became the Internet of people in which Facebook, for example, connects roughly a third of humanity to generate hundreds of billions of dollars.

Now we are embarking on the fourth wave, the Internet of Things, which promises to dwarf every phase that came before. The IoT can be defined as a network of physical devices including appliances, vehicles, buildings, warehouses, pipelines and other infrastructure fitted with sensors and actuators that enable the objects to collect and share data with a central controller.

## **Nikkiso Acquires AquiSense**

AquiSense Technologies, a maker of UV-C LED disinfection systems, has been acquired by Nikkiso America in a cash deal.

With over a half century of product development, Nikkiso has provided original technologies to a range of industries, including medical, aviation, life sciences, and microelectronics. AquiSense and Nikkiso share a common goal of providing disinfection products employing UV-C LEDs.

This acquisition allows Nikkiso and AquiSense to accelerate market commercialisation of disinfection products around the world. "We have been excited to see the innovative solutions at AquiSense enter a number of high value markets and look forward to supporting those efforts," said Dennis Martin, CEO of Nikkiso America

## **AMD, Nvidia GPU Battle Heats Up**

The first battles between AMD's Polaris and Nvidia's Pascal are now being waged, but it's too early to tell who will win the war of the new graphics processors.

"I've done testing but it's a little goofy...[because] we are not in a position to compare the fastest with the fastest," said Dean McCarron, principal of Mercury Research, a veteran tracker of GPUs.

The first Polaris product out is the Radeon RX480, but AMD positions it as a midrange graphics card. Its performance is "right on top of the Nvidia GTX 970 and a touch behind its GTX 1060 — but they are all very close in game frame rates," said McCarron who uses his own suite of test games in a class of benchmarks that he says is somewhat subjective.

So far, AMD has not said when it will ship a high-end Polaris card for gamers that would be a head-to-head competitor for Nvidia's GTX 1080. "But we are coming up on holiday season, so presumably it's a good time for new products," he said.

## **Toyota Partners with Taxi for Automated Driving**

Toyota Motor Corp and the Japan Federation of Hire-Taxi Associations (JFHTA) have entered into a memorandum of understanding for the development of autonomous driving technologies.

They hope to address the particular needs of taxis, aiming to introduce a new vehicle targeted at taxi operators by 2017.

The car maker and the Japan Federation of Hire-Taxi Associations have been long time partners and hope to leverage their respective know-how and data access to design Japan's future autonomous taxi fleets.

The two parties hope to popularize taxis with universal design principles (such as wide-opening doors, a low floor) that can easily be used by all, drawing up vehicle specifications to enhance their hospitality, safety, and convenience for both customers and drivers while providing services in multiple languages.

## **AMD's Zen Takes On Intel**

The most impressive demo I saw on this week when the 2016 Intel Developer Forum is wrapping up came from Intel's competitor Advanced Micro Devices at an event Wednesday night. AMD showed desktop and server versions of chips using its newly developed Zen CPU core, and to say the results were impressive would be an understatement.

Despite Intel demos of its next-generation Kaby Lake PC processor the surprise star of this week is Zen. AMD's Summit Ridge desktop processor and its Naples server processor are the first two instantiations of AMD's re-booted x86 core and processor architecture. AMD impressed attendees here in a manner we haven't seen from the company in a decade by achieving a stated goal of delivering a 40% improvement in instruction level parallelism compared to its previous Excavator x86 core.