Making Connections at SEMICON Europa 2022 – November 22, 2022

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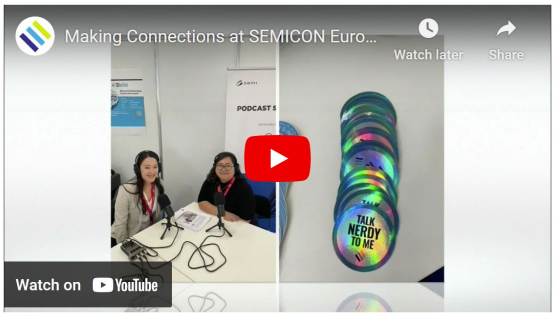
Blogs, Francoise in 3D
Nov 22, 2022 · By Francoise von Trapp

What a week! From keynotes, panel discussions, and podcast interviews, to booth parties and after-hours networking – the week at SEMICON Europa was all about making connections.



https://youtu.be/mga06OsYUzU

For us, that meant hosting our first-ever 3D InCites member social event on Monday, November 14 at the iconic Augustiner Keller. Guests from ACM Research, ASE, ESPAT – Consulting, Evatec, Plasma-Therm, SurplusGLOBAL, and Kiterocket enjoyed connecting and conversing over beer, Brotzeit, and other traditional German fares, topped off with a schnaps toast to kick off an eventful week.
While this inaugural event drew only a small gathering of our members who were exhibiting at SEMICON Europa, those who attended are already looking forward to next year. Once the word gets out, we think it will become the talk of the show.

Making Connections that Enable $10T Growth

The overarching themes for this year's executive summit were like those of SEMICON West:

- Creating a robust supply chain to reach $1T by 2030
- Pursuing a sustainability path to net zero emissions
- Developing a diverse talent pipeline to fuel industry growth

Each of the invited keynote speakers addressed these topics from the European perspective.

During the opening ceremonies, Laith Altimime, president, SEMI Europe; and Ajit Manocha, SEMI CEO, teed up the discussion with broad strokes on these critical topics. Industry leaders from around Europe, such as imec's Luc van den hove, Edwards' Kate Wilson, Athinia's Laura Matz, Porche's Barbara Frenkel, and others filled in the details.

Chips are the New Oil

“Data is the New Oil” is a one-liner that’s been uttered many times over the past few years to explain what’s driving semiconductor development. In his opening remarks, Laith Altimime proclaimed that since the chip shortage, we’ve realized that chips, rather than data, are the new oil.

Data, connectivity. and the internet of things (IoT) will continue to drive demand. By 2025, thanks to advances in edge computing, artificial intelligence (AI), and machine learning (ML) more data will be generated by machines than humans, and that data will need to be managed. This is driving the need for high-performance computing.

Altimime re-emphasized Europe’s goal of reaching a 20% global semiconductor market share by 2030, by building a more resilient ecosystem fueled by investments from both the government (the EU CHIPS Act) and companies that are #1 in the world, including GlobalFoundries, ST Microelectronics, Infineon, Bosch, and NXP.

Ajit Manocha up the ante from becoming a $1T dollar industry by 2030, to “putting a stake in the ground” – based on analysts’ predictions – to reach $10T in the 10 years beyond 2030.

Making Technology Connections with Deep Tech

Van den hove talked about the rollercoaster ride we’ve been on in the aftermath of the pandemic, the war in Ukraine, the subsequent energy crisis, and the financial crisis, and how this has propelled semiconductors into the limelight.

He also explained how semiconductors enabled the ability to generate and analyze gigabytes of data using AI to quickly sequence the human genome, and how that made it possible to develop a COVID vaccine in just one year.

“We can sequence the human genome in less than a day now,” he said. “Sequencing has become a standard diagnostic technique. We are lucky that mRNA technology was ready to be deployed at the start of the pandemic.”

We’ve been hearing a lot about the key to enabling Moore’s law lies in overcoming technology “walls”: power, performance, area, and cost (PPAC). Van den hove added one more wall that needs breaking down: sustainability. This requires changes in materials sourcing.

While Van den hove says he expects the lithography roadmap to continue shrinking device architectures, he says we need a paradigm shift to system-level thinking to address all five walls. It’s no longer a competition between node scaling and heterogeneous integration. 3D stacked SoCs and chiplet architectures can help us realize another version of Moore’s law that combines scaled and non-scaled technologies.

I had the opportunity to dive deeper into these topics and more with Van den hove in a podcast interview. Stay tuned for our Europa Keynote Highlights episode dropping on Thursday.

Making Connections Between Cars and Semiconductors

The chip shortage hit the automotive industry hard in 2021, with a reported $61B in missed sales.

According to Porsche's Barbara Frenkel, the biggest hurdle was that they (Porsche) didn't speak the same language of the semiconductor industry. This was the wake-up call they needed to realize the automotive and semiconductor industries must work hand-in-hand on innovation and supply chain security.

Projected triple demand means the industry is still facing a structural shortage of large-node devices. "Communication and transparency are key to solving these critical situations," she said, as well as risk mitigation.

Four critical success factors include:

- Shifting to a software-defined vehicle
- Executing supply chain excellence
- Implementing semiconductor organizations

Making Connections between Renewable Energy and Semiconductor Manufacturing

Sustainability continues to be a bit of a conundrum for our industry. On the one hand, semiconductor devices are essential to achieving key sustainability initiatives. On the other hand, the semiconductor industry is a big contributor to the problem.

Consider EVs. Thanks to global efforts to replace combustion-engine-powered vehicles with electric vehicles, along with digitization, by 2030, the automotive bill of materials will contain 20% semiconductor devices. Porsche's Frankel noted that the company's roadmap has 50% of all vehicles electrified by 2025. By 2030, that number will be 80%.

So are we just eliminating one huge contribution to carbon emissions while creating another, perhaps even larger issue? The natural resources used to build semiconductor chips that go into the EVs, and the electricity needed to power them comes from somewhere.

As Edwards' Kate Wilson notes, "The semiconductor industry will be the 'new oil' in the worst way. Because we're one of the most energy-hungry industries in the world."

Net zero carbon emissions by 2050 may seem daunting. Wilson's advice? Start by picking off the biggest problems in manufacturing to impact the environmental footprint:

- Address semiconductor scope definitions upstream and downstream.
- Shift to a circular economy that reduces, reuses, and recycles materials
- Increase the use of renewable energy in chip manufacturing
- Decarbonize the grid

Making Connections with Data

In her executive keynote, Laura Matz, Athinia, talked about the importance of sharing data across the semiconductor ecosystem to improve device quality, sustainability, and supply chain availability. She also tapped into the Data is the New Oil analogy to illustrate her point:

- Data generation is “upstream drilling”
- Data curation is “refining”
- Data analytics is downstream usage

Matz explained that we want to focus our time on the analytics, as that’s where key value is created, versus the time spent generating the data. “Siloed data makes insights harder and slower to find, and collaboration more difficult,” she explained.

Athinia, Matz’s brainchild, is a partnership between Merck KGAA Darmstadt Germany and Palentir, to create a secure and collaborative ecosystem that leverages data for specific areas Initially launched for the materials supply chain, the team is exploring other use cases, such as:

- Quality improvement
- Supply transparency and availability
- Tracking and managing environmental impact
- Making secure data exchange easier and safer
- Using advanced analytics to uncover novel insights

Connecting with Our Members

As always, for me, the best part of SEMICON Europa was the behind-the-scenes conversations with members and colleagues. We captured some of these for future podcast episodes.

And let’s not forget the booth parties. This is what really sets SEMICON Europa apart from the other events we attend throughout the year. Beginning with FRT Formfactor’s annual booth bash on Tuesday night, followed by the SEMI Networking gala, the festivities continued throughout the week.

There was the annual booth party blow-out on Wednesday featuring EV Group, Trymax, Technic, Silicon Saxony, whiskey tasting around the UK companies, and others. Technic may not be a 3D InCites member (yet), but if we had a booth party award, they would win the prize for the best French wines and cheeses – and definitely the biggest crowd. ERS electronic GmbH’s Bavarian Breakfast on Thursday was the newest addition to the festivities and one that I’m already looking forward to next year. Hope to see you all there!

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