

## One Roadmap Charts Seagate Course from Cloud to the Edge

As Seagate integrates its hard drive, flash and systems offerings into one new product roadmap, the company is charting its course to include not only client, OEM and cloud-based customers, but also a new set of players emerging on the “Edge.” And clearing the technical hurdles along the way are the hundreds of company technologists who met at Seagate’s recent Tech Review in Loveland, Colorado.

The biannual event, which drew about 300 engineers and scientists from Seagate sites around the world, featured a number of demos of soon-to-be-launched technologies. One of them was clearly a favorite of keynote speaker Chris Petersen, a hardware systems technologist at Facebook.

“We’re definitely open to finding new creative ways to get us more mileage per terabyte,” he said. “And (Seagate’s) Dual Actuator technology could get us there.”

Outlining Seagate’s key product and technology imperatives, SVP and CTO [Mark Re](#) emphasized the importance of the company’s leadership in the nearline market, productization of [heat-assisted magnetic recording](#) (HAMR) technology, opportunities for growth in SSD—especially resulting from a pending agreement with [Toshiba](#)—and the systems group’s alignment with the core business.

### Moving ‘West to East’

Seagate’s [Mike Troemel](#), SVP, product development group, emphasized the need for continuous improvement. Specifically in product planning, technology staging, roadmap linkage, subsystem roadmaps and leverage between HDD and SSD platforms. “All this is ‘Storage 101,’ but it’s worth being reminded of,” he said.

“As we move along the roadmap, we want to link west-to-east within a market segment,” said Troemel, leveraging from one product to another. “And north-to-south as well, in order to leverage technologies between HDD swim lanes. As we further develop our ‘One Roadmap,’ we’ll focus on additional leverage between HDD, SSD and systems.”

From Facebook’s Petersen, the call to action was to keep working those requirements that mean the most to a cloud service provider of Facebook’s size. Reliability and low power usage are key, he said.

“We’re always on and our data centers need to be fully automated and ‘low-touch,’” Petersen explained. “With over 2 billion users, we have to think in very large numbers. We’re talking exabytes of data. So when it comes to error rates, those numbers become a much bigger problem at this scale.”

### On the Way to the Edge

Looking ahead, Mark Re cited the industry trend toward decentralization of storage. “By 2020, analysts predict we’ll have evolved from the current mobile-cloud architecture to a more distributed model, referred to as ‘Edge Intelligence,’ ” he said.

Through machine learning, artificial intelligence and the Internet of Things, this model moves some applications out closer to where the data is generated, said Re.

“There’s a growing need to have instant access to this data and the ability to compute remotely,” he said. “As we prepare for this new era of smart homes, cities and factories; robots, autonomous vehicles and drones, our focus at Seagate is on identifying those new customers, understanding how they’re using the data and zeroing in on their storage and compute needs.”

During the four-day Tech Review, attendees gathered for breakout sessions on topics including HAMR, HDD and SSD performance; SuperDrive, data flow and emerging technologies. For Seagate's Stacey Secatch, a senior staff engineer in SSD system architecture, one of the most interesting sessions was on emerging technologies.

There were some technologies discussed in that session that, if applied at both the systems and drive level, could result in a more effective solution for the customer, said Secatch. "It was exciting to see that we're exploring this technology together, leveraging our vertical integration to deliver a better product."

That "north-south" movement across the roadmap is one of many integrated efforts that were furthered during the Tech Review, said Re.

"I'm really pleased with the ground we've covered in the last four days," he said. "As we develop new synergies across the core, SSD and systems groups, we're beginning to see the power of having one roadmap and one team." —By *Cindy Martini*

**Photo caption:**

*Facebook's Chris Petersen says he looks forward to the launch of Seagate's Dual Actuator technology, one of several innovations demonstrated at the Tech Review.*

**Photo caption:**

*Tech Review attendees discuss Seagate's SuperDrive. From left are Ron Delamarter, Jim Angelo and demo presenter Robert Murphy.*

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