

# Proton beams are on track at Collider

Physicists returned to their future on Friday. About 10:00 P.M. outside Geneva, scientists at CERN, the European Center for Nuclear Research, succeeded in sending beams of protons clockwise around the 17-mile underground magnetic racetrack known as the Large Hadron Collider, the world's biggest and most expensive physics experiment.

For physicists, the event was a milestone on the way back from disaster and the resumption of a 15-year, \$9 billion quest to investigate laws and forces that prevailed when the universe was less than a trillionth of a second old. The collider was designed to accelerate protons to energies of seven trillion electron volts apiece and smash them together in tiny fireballs in an effort to replicate and study the conditions of the Big Bang.

The first time protons circled the collider, on Sept. 10, 2008, the event was celebrated with Champagne and midnight pajama parties around the world. But the festivities were cut short a few days later when an electrical connection between a pair of the collider's giant superconducting electromagnets vaporized.

Subsequent work revealed that the machine was riddled with thousands of connections unable to handle the high currents required to run the collider at its intended energy.

Physicists and engineers have spent the past year testing and making repairs. While they have



not replaced all the faulty connections, they have patched things up enough to allow the collider to run at less than full speed.

Calling the past year's work a "Herculean effort," CERN's director for accelerators, Steve Myers, said

the engineers had learned from painful experience and understood the collider far better than they had before.

CERN's director, Rolf Heuer, said in a statement, "It's great to see beam circulating in the LHC

again," but he and others cautioned that there was a long way to go before the collider started producing the physics it was designed for.

When the collider begins to do real physics next year, it will run at half its original design energy, with

protons of 3.5 trillion electron volts. The energy will be increased gradually during the year, but it could be years, physicists say, before the machine reaches its full potential.

Thousands of the troublesome junctions will have to be rebuilt during a yearlong shutdown in 2011, and engineers have to figure out why several dozen of the superconducting magnets seem to have lost their ability to operate at high intensities.

The delay has given new life to the collider's main rival, the Tevatron at the Fermi National Accelerator Laboratory in Illinois. If all goes well, CERN says, the protons will start colliding at low energies in about a week.

Those first collisions will occur at the so-called injection energy of 450 billion electron volts. The machine will then quickly step up to 1.1 trillion electron volts, which is just above the energy of the Tevatron.

CERN is hoping to achieve that landmark as a symbolic Christmas present before a short holiday shutdown.

(Source: The NYT)



## Sony planning new online store

Sony is planning a new online store à la Apple's iTunes, but with a few twists.

Announced at a strategy meeting in Tokyo on Thursday, the new service will hawk music, movies, books, and other downloadable content geared for its various electronics, including TVs, mobile phones, music players, and computers. The service, which Sony aims to launch next year, will link the company's devices and digital content that it produces, setting it apart from other online stores.

"That's the kind of combination that I think is not seen anywhere else," Kazuo Hirai, Sony executive vice-president for networked products and services, said in an interview with the Associated Press. "That I think is where our core competence lies, and that's a differentiator for Sony."

Hirai also spoke about the new service with BusinessWeek, saying that it won't just sell products but also tap into social networking by letting people upload their own photos or videos and connect with each other.

"It's not just access content, stream it, and enjoy," Hirai told BusinessWeek. "What are your friends watching right now? There's a screen that says all the programming that's available. It highlights all the things that your friends are watching, for example. It's a community experience."

Called the Sony Online Service for now, it will model itself after the company's successful PlayStation Network, a free service that has captured 33 million registered users who download movies, access social networks, and grab games for the PS3 and portable PSP console. Hirai said that gamers will be able to access the new online service directly through their PlayStation Network accounts.

Of course, Sony has been down this road before in 2005 with its late Sony Connect music service. The aborted iTunes clone was done in by internal politics and a failure to connect with consumers, forcing the company to shut it down in 2007.

But with a new, more cohesive management team put in place by CEO and president Howard Stringer, Sony is hoping to avoid the infighting that helped kill Connect.

Sony needs a shot in the arm at this point. Though the company pioneered the portable music concept 30 years ago with its Walkman, it has struggled to compete in the Digital Age.

Continuing a string of quarterly losses, Sony took a \$292 million net loss in its recent second quarter. Despite cost cuts and layoffs, the company is projecting a total loss of \$1.3 billion for the full fiscal year.

(Source: CNET News)

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