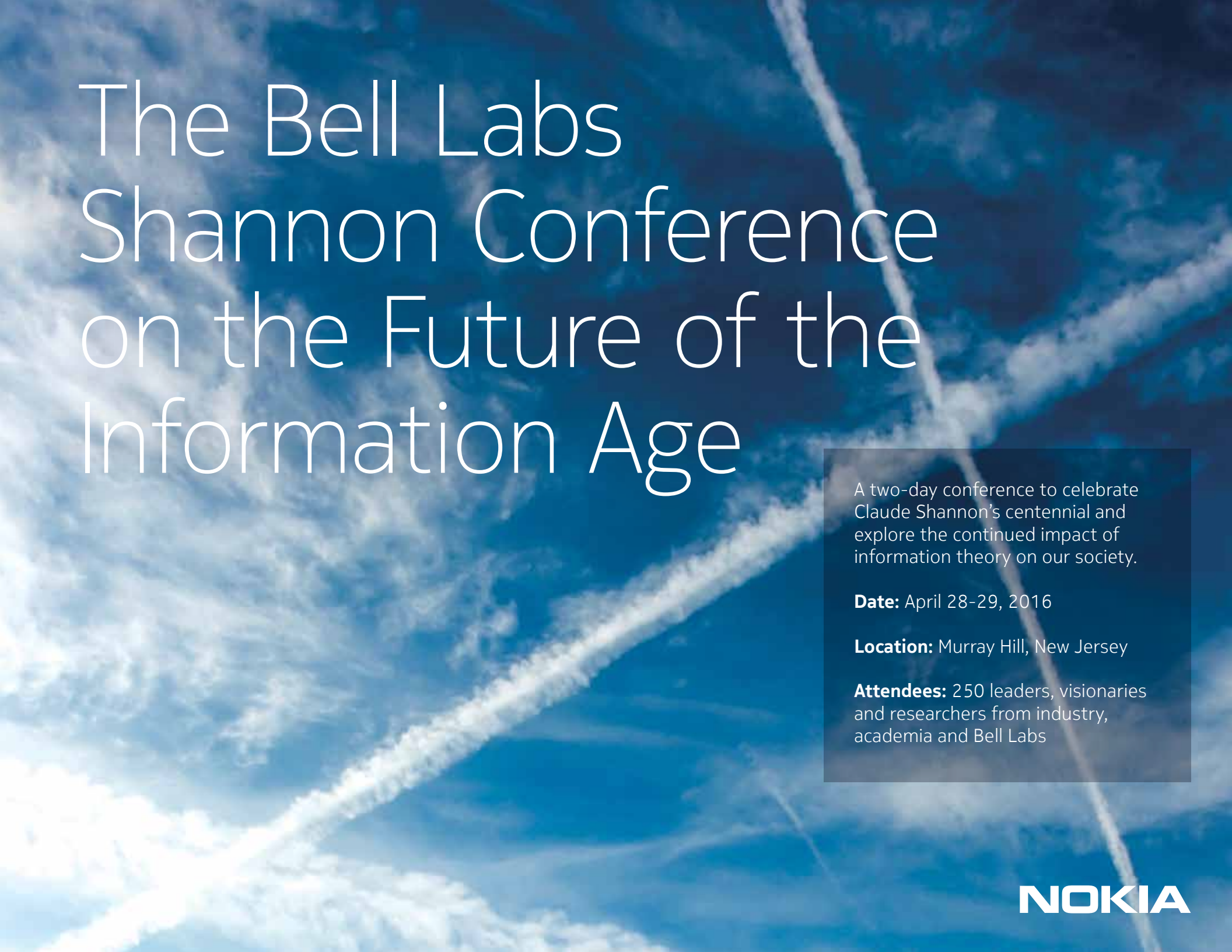

The Bell Labs Shannon Conference on the Future of the Information Age

A two-day conference to celebrate Claude Shannon's centennial and explore the continued impact of information theory on our society.

Date: April 28-29, 2016

Location: Murray Hill, New Jersey

Attendees: 250 leaders, visionaries and researchers from industry, academia and Bell Labs

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Celebrate the dawn of a new digital era

We are at the dawn of a new digital era, where everyone and everything will be digitally connected and controllable, allowing an unprecedented level of automation and consequently the ability to 'create time'.

The extent of disruption to human existence will be such that this will likely be viewed as the 6th technological revolution of the modern era. This revolution will profoundly change the global techno-economic fabric, massively shifting towards a new global-local paradigm, where any digital 'good' is accessible, anywhere.

Furthermore, with the emergence of ever more sophisticated 3D printing techniques, physical goods would be recreated locally on demand at any time in a new digital + local – physical economy. The magnitude of change will be comparable in the departure from the past and impact on the future - to the agricultural revolution 12 millennia ago and the industrial revolution 2 centuries ago. This revolution is rooted in the dawn of the Information Age, characterized by the shift from industrial activity to an information-based economy, based on emergence of digital computing and digital transmission techniques, which were in turn based largely on the information theoretic concepts defined by Claude Elwood Shannon.

Bell Labs is celebrating the centennial of Shannon's birthday — April 30th, 1916 — by hosting a unique 2-day conference focusing on a discussion of the future digital information economy and the impact of information theory on society today and in the digital future. This special event celebrates Shannon's life and influence and commemorates his profound impact with the creation of new Bell Labs Shannon Visionary Awards presented at the event.

April 28-29, 2016, Murray Hill, New Jersey

The Bell Labs Shannon Conference on the Future of the Information Age

We begin our 2-day conference with a gathering of the leaders and visionaries in the Information Society, with provocative and informed discussion of our digital past, present, and future, in the classic Bell Labs tradition. There will be a student competition, highlights of Shannon and his life, and a technical symposium on current research.

Day One - April 28

Morning Session

Keynote presentations by 5 global luminaries and visionaries who will be recognized with Bell Labs Shannon Visionary Awards. We are joined by:

- Eric Schmidt, Executive Chairman of Alphabet Inc.
- Irwin Jacobs, Co-founder of Qualcomm
- Bob Metcalfe, Co-inventor of Ethernet and formulator of Metcalfe's Law
- Henry Markram, Director of the Human Brain and Blue Brain projects
- Amber Case, Cyborg Anthropologist.

Afternoon Session

We are remembering Shannon in a series of talks and fireside chats. Our invited guests include:

- Elwyn Berlekamp
- Robert Gallager
- Leonard Kleinrock
- Sergio Verdu

These distinguished guests will entertain us with personal recollections of Shannon, as well as an exhibit of previously unreleased Shannon memorabilia.

Research Demonstrations and Student Competition

Bell Labs researchers will showcase their latest innovations based on new applications of information theory to multiple domains, from social graphs to wireless beamforming and novel future optical transmission systems.

Invited students will present their research in Information Theory tools and applications in a competitive forum.

Evening

The day will culminate with the premiere performance of the Human Digital Orchestra — a new Bell Labs 'Experiment in Art and Technology (EAT)', together with Stevens Institute of Technology, followed by a gala dinner.

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Day Two - April 29

We are hosting a series of technical presentations in a technical symposium outlining the latest research built upon Shannon's work in both traditional communications as well as in areas such as bioinformatics, economic systems and social networks.

Our notable invitees include:

- Emmanuel Abbe
- Gerhard Kramer
- Vince Poor
- Muriel Medard
- Shlomo Shamai
- Amin Shokrollahi
- Christopher Sims
- Emre Telatar
- David Tse
- Michelle Effros
- Olgica Milenkovic
- Andrea Goldsmith
- Rudiger Urbanke

In his groundbreaking paper, "A Mathematical Theory of Communication" (Bell System Technical Journal, July and October, 1948) Claude Shannon laid the formal foundation of a quantitative science of digital information. This theory grew, in part, out of the field of statistical mechanics, where the notion of entropy had been introduced as a measure of disorder in large configurations of atoms and molecules in random physical systems. Shannon's seminal work showed how entropy, appropriately redefined and applied, provided the mathematical means to measure the information content of signals and systems. Immediate areas of application were the quantification of the capacity limits of communication in noisy channels, and shortly afterwards the limits of data compression and reliable storage. Shannon's formal foundations were broadened subsequently to many other application areas, including cryptography, natural language processing, statistical inference, neurobiology and more recently to evolution, ecology, quantum computing, linguistics, pattern recognition and progressively into many areas of what we now call data analytics.

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To register for
the Conference

www.etouches.com/shannoncentennial

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