

The 2016 Tech 50

Faster, Cheaper, Bigger

The top financial technologists leverage cloud innovations and agile software techniques to accomplish more, on a larger scale, than ever before.

● TECHNOLOGISTS IN THE BUSINESS world set performance goals that may push their skills to the limit, but the benchmarks are simply stated: better, faster and cheaper. Those who excel in the financial services industry — including the executives, innovators and entrepreneurs spotlighted in *Institutional Investor's* Tech 50 — are better and faster than ever before. They are applying advanced technologies that allow them to accomplish more within budget than ever before and are doing so on a large, often global, scale that has become imperative but was not feasible until recently.

Financial firms are dealing with new regulations, costs and capital pressures, and facing ever-evolving

competitive challenges from both familiar peers and disruptive fintech upstarts. Yet the asset managers, banks, exchanges and other entities represented in the Tech 50 are not in retreat when it comes to information technology and innovation. Pushing forward is an operational and strategic necessity, and no less so for compliance and cybersecurity.

There are common themes up and down this 16th annual ranking: agility in software and product development; mobility to accommodate activities increasingly untethered from the traditional desktop; and cloud computing for its ubiquitous availability and immense scalability.

And there are blockchain reactions. Virtually everybody has one, starting at

Long-Term Plan

Top management's goal is "the digitization of BofA," Catherine Bessant says.

the top with Bank of America Corp. chief operations and technology officer Catherine Bessant. The second woman to be ranked No. 1 (following then-JPMorgan Chase & Co. international president Heidi Miller, in 2010), Bessant sees in the distributed ledger "the power to produce tremendous amounts of innovation." Given that "the execution of a commercial application has not been at scale," she says, blockchain remains "a great technology with a lot of potential."

If anyone can speak to scale, it is Bessant, who has a tech budget of \$17 billion and 110,000 employees and contractors worldwide. An indication of BofA's innovative edge is its industry-leading 259 patents last year.

Success at scale is also evident in the continuously improving top and bottom lines of Intercontinental Exchange and CME Group, led, respectively, by career technologists Jeffrey Sprecher (No. 2) and Phupinder Gill (No. 4).

The Tech 50 ranking was compiled by *Institutional Investor* editors and staff, with nominations and input from industry participants and experts. Four primary sets of attributes were evaluated: achievements and contributions over the course of a career; scope and complexity of responsibilities; influence and leadership inside and outside the organization; and pure technological innovation. The top ten appear in the following pages, and full profiles for all 50 can be viewed online at iim.ag/tech50.

Of the 50 entries, 37 return from last year. The returnees' 2015 ranks are shown, and the rest are designated "PNR" (previously not ranked). ●

The Tech 50 was compiled under the direction of Senior Contributing Editor Jeffrey Kutler. Individual profiles were written by Kutler; Asia Bureau Chief Allen T. Cheng; Senior Writers Frances Denmark and Julie Segal; Research Staff Writer Jess Delaney; Content Editor Anne Szustek; Associate Editor Kaitlin Ugolik; Assistant Editor Jennifer Werner; and Editor Michael Peltz.

THE 2016 TECH 50: NEIL KATZ

The D.E. Shaw managing director jumps to No. 19 on this year's Tech 50 ranking.



19

NEIL KATZ
Managing Director
 D.E. SHAW & CO.
 LAST YEAR: 20

Neil Katz took his first programming class at the age of ten and has loved playing with computers ever since. Today, as managing director of D.E. Shaw & Co., overseeing more than 250 technologists at the \$37 billion alternative-investment firm, Katz indulges his fondness for hacking on Friday evenings. "I'll find a little piece of our software that has a rough edge to it, and I'll polish that edge because writing code remains one of my great pleasures," the 44-year-old says. "As we've replaced our older technology with newer, more efficient software, we've saved time and generated happiness among the team," he adds. To that end, D.E. Shaw's developers are embedded alongside the quantitative researchers in the multistrategy firm's various investment units rather than working as part of a central information technology group. "We get huge benefits from that," says Katz, who joined New York-based D.E. Shaw in 1994 after graduating from Stanford University with a BS in electrical engineering and a BA in quantitative economics. During the past year Katz's developers have been working on ways to process enormous amounts of data chronologically after it has been collected. "We've been developing systems to allow us to process this chronological data at scale, which has allowed us to go beyond standard modeling to explore the data for patterns," he explains. Although D.E. Shaw historically has avoided cloud computing because it can do things more cheaply using its own data centers and proprietary technology, Katz says the firm is starting to look at how it could transform its systems to efficiently use cloud platforms such as Amazon Web Services as they come down in price: "The idea is to get this to the point where if our quants want to use 100,000 machines right now to deal with a data set that is astronomically large, they can do that and it will be an advantage."

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THE BEST OF THE REST: NOS. 11-50*

RANK	NAME	TITLE	FIRM
11	Stephen Neff	Enterprise CTO	Fidelity Investments
12	David Craig	President, Financial & Risk	Thomson Reuters
13	Michael Spencer	CEO	ICAP
14	Michael Bodson	President and CEO	Depository Trust & Clearing Corp.
15	Charles Li	CEO	Hong Kong Exchanges and Clearing
16	Chris Concannon	President and CEO	BATS Global Markets
17	Blythe Masters	CEO	Digital Asset Holdings
18	David Rutter	CEO	R3CEV
19	Neil Katz	Managing Director	D.E. Shaw & Co.
20	Lee Olesky	CEO	Tradeweb Markets
21	Richard McVey	Chairman and CEO	MarketAxess Holdings
22	Seth Merrin	CEO	Liquidnet Holdings
23	Robert Alexander	CIO	Capital One Financial Corp.
24	Brad Katsuyama	CEO	IEX Group
25	Antoine Shagoury	Global CIO	State Street Corp.
26	David Gledhill	Head of Group Technology and Operations	DBS Bank
27	Lou Eccleston	CEO	TMX Group
28	Andreas Preuss	Deputy CEO	Deutsche Börse
29	Dan Schulman	President and CEO	PayPal Holdings
30	Scott Dillon	CTO	Wells Fargo & Co.
31	Mike Chinn	President	S&P Global Market Intelligence
32	Craig Donohue	Executive Chairman	Options Clearing Corp.
33	Gary Norcross	President and CEO	Fidelity National Information Services
34	Steven O'Hanlon	President and CEO	Numerix
35	Sebastián Ceria	CEO	Axioma
36	Michael Cooper	CTO	BT Radianz
37	Tyler Kim	Global Head of Fund Services	MaplesFS
38	Neal Pawar	CTO	AQR Capital Management
39	David Harding	CEO	Winton Capital Management
40	Chris Corrado	COO	London Stock Exchange Group
41	Brian Conlon	CEO	First Derivatives
42	Jim Minnick	CEO	eVestment
43	Stephane Dubois	CEO	Xignite
44	Mazy Dar	CEO	OpenFin
45	Yasuki Okai	President	NRI Holdings America
46	Kim Fournais	CEO	Saxo Bank
47	Jock Percy	CEO	Perseus
48	Robert Schiffellite	President, Investor Communication Solutions	Broadridge Financial Solutions
49	Brian Sentance	CEO	Xenomorph Software
50	Pieter van der Does	President and CEO	Adyen

*Go to iim.ag/tech50 for full profiles.