

# technology review

Published by MIT

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Electronic tattoos

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Cheap natural gas:  
boon or boondoggle?

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Fred Wilson on  
why the collapse of  
venture capital is good



# 35 REVOLUTIONARY INNOVATORS

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## 2012 Programming Highlights

- **Eytan Baksky** and **Andrew Fiore**, data scientists at Facebook, on the social implications of our growing connections online
- **Rodney Brooks**, founder of Rethink Robotics, on retooling manufacturing with a new generation of industrial robots
- **Charles Dages**, executive vice president for emerging technology at Warner Brothers, on surprising ways that technology is enabling a more engaging entertainment experience
- **Steve Herrod**, CTO of VMWare, on redefining networking and the future of cloud computing
- **Nathan Myhrvold**, founder of Intellectual Ventures, on investing in scalable alternative energy sources

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**technology  
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**Ren Ng**  
ENTREPRENEUR  
OF THE YEAR  
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Photograph by  
Timothy Archibald

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# 35 INNOVATORS UNDER 35

*Our latest group of 35 young innovators features people whose contributions in energy, medicine, computing, and materials will influence the direction of human affairs.*

By THE EDITORS

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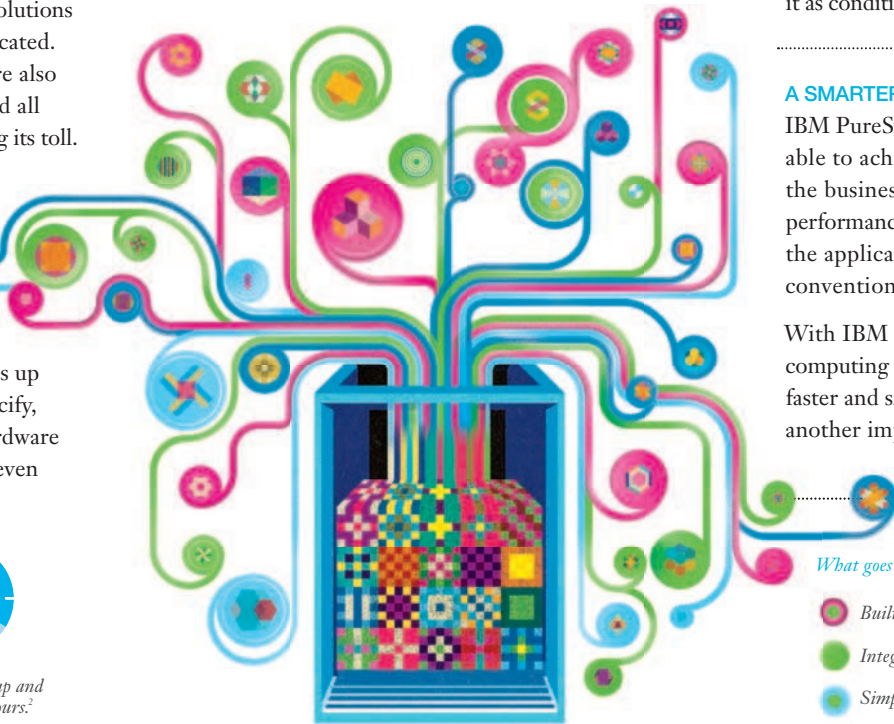
# WHY TODAY'S SMARTEST SYSTEMS

The good news is IT solutions are now more sophisticated. The bad news is they're also more complicated. And all this complexity is taking its toll.

In fact, the typical IT department now spends up to 161 days just to specify, design and procure hardware for a new IT project (even longer for software).<sup>1</sup>



IBM PureSystems can be up and running in under four hours.<sup>2</sup>



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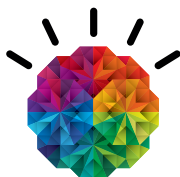
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1. Based on a 2011 commissioned study conducted by Forrester Consulting on behalf of IBM. 2. Based upon testing of the IBM PureApplication System W1500-96 with time measured from powering on the system to when it is ready to support application deployments and based upon testing of the IBM PureFlex System Express & Standard models containing one chassis and one compute node with the time measured from powering on the system to when it is ready to support a virtual image deployment. 3. Up to 2X application density based upon simulations of virtualized applications on an IBM Flex System x240 Compute Node as compared to a previous generation IBM system. The IBM Flex System x240 Compute Node is available in IBM PureFlex System and IBM PureApplication System. Up to 2X performance of business applications based upon testing of IBM Storwize v7000 "Easy Tier" on previous generation IBM system. IBM Storwize v7000 is included in IBM PureFlex System and IBM PureApplication System. IBM, the IBM logo, ibm.com, PureSystems, Smarter Planet and the planet icon are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at [www.ibm.com/legal/copytradeshtml](http://www.ibm.com/legal/copytradeshtml). © International Business Machines Corporation 2012.

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## feedback

“What Facebook Knows,” July/August 2012

“There can be no concern for privacy when you *voluntarily* give up your personal information.”

*Peter Glassman, Schaumburg, Illinois*

**FACE FACTS** Michael Wolff’s takedown of Facebook’s advertising strategy (“The Facebook Fallacy”) wasn’t the only piece from our July/August issue to draw hundreds of letters and comments—but it was the one with the most passionate objections. “Wow, what an incredibly ignorant understatement of Facebook’s raw power in numbers,” wrote **Fremitus** in an online comment. “To actually think that they will just use 10-year-old concepts (pop-ups and banners) as their big idea is ludicrous. The biggest reason to go public is to have cash on hand, and for what? For buying smaller companies that are doing innovative things. That’s the big idea, someone else’s. Just like Google and everyone else.”

**AnsonA4** wrote in to thank Wolff for the article and claimed, “It made me think deeply about the situation. In the end, however, I think you are absolutely wrong about the demise of Facebook. Right now the majority of Facebook’s revenues come from display advertisements, yes, but that will change in the future. They will start selling products similar to Amazon—you will be able to buy movies and music, and advertising will become much more rich. You’re almost completely ignoring the power and value of the information that Facebook already has and is gaining every day. There really is no clear way of stopping Facebook at this point—the information they have is too valuable and marketable.”

Our related cover story on Facebook’s use of our personal data, “What Facebook Knows,” by senior IT editor Tom Simonite, inspired **Peter Glassman** of Schaumburg, Illinois, to wonder if we have any right to

demand our privacy with regard to Facebook in the first place. “There can be no concern for privacy when you *voluntarily* give up your personal information. And for what? It’s not like giving your personal info to a bank and they give you a credit card in return. What does Facebook give you? More advertising.”



July/August 2012

**CHEAPLY GREEN** In “The Great German Energy Experiment,” our chief correspondent, David Talbot, investigated Germany’s ambitious plans to slash its greenhouse-gas output. One online commenter, **Elidyl**, took a look at the cost of those plans and found them downright cheap. “Talbot writes: ‘Various economic think tanks predict that the country will spend somewhere between \$125 billion and \$250 billion on infrastructure expansion and subsidies in the next eight years.’ Another way to look at it: initial projections

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