Working at OSTP

2014–15

Randal E. Bryant
Carnegie Mellon University

`http://www.cs.cmu.edu/~bryant`

My Story

CMU

- **Faculty since 1984**
- **Dean 2004–2014**
  - School of Computer Science spans wide range of disciplines
- **No sabbatical in 30 years**

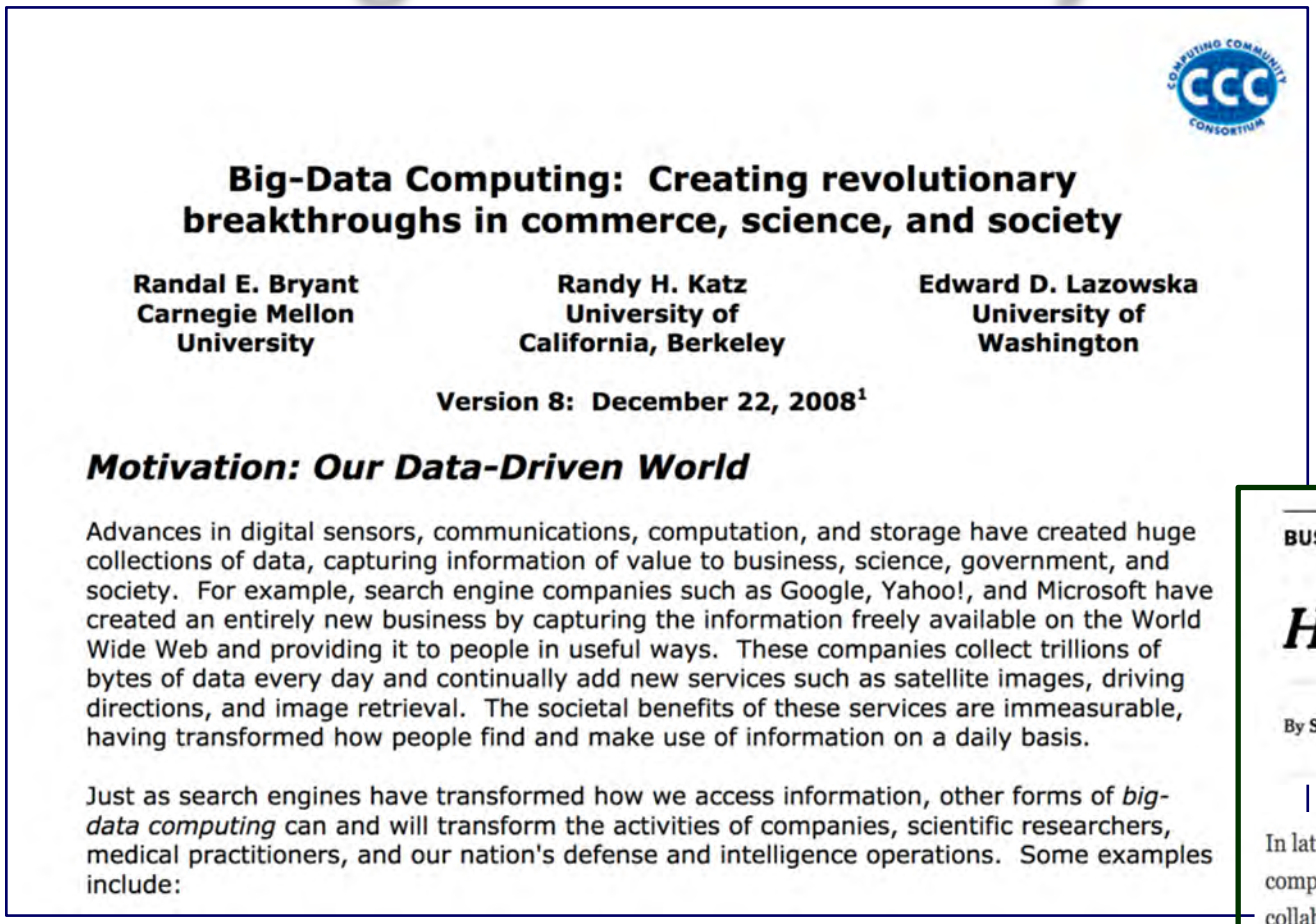
External Leadership

- **CRA board (2000–2006)**
- **CCC organizer and board member (2010–2017)**
- **NSF CISE Advisory Committee (2006–2009)**
- **NITRD Review (2010)**

2014

- **Chance to try something different!**

Background: Policy Credentials



Big-Data Computing: Creating revolutionary breakthroughs in commerce, science, and society

Randal E. Bryant
Carnegie Mellon University

Randy H. Katz
University of California, Berkeley

Edward D. Lazowska
University of Washington

Version 8: December 22, 2008[1]

Motivation: Our Data-Driven World

Advances in digital sensors, communications, computation, and storage have created huge collections of data, capturing information of value to business, science, government, and society. For example, search engine companies such as Google, Yahoo!, and Microsoft have created an entirely new business by capturing the information freely available on the World Wide Web and providing it to people in useful ways. These companies collect trillions of bytes of data every day and continually add new services such as satellite images, driving directions, and image retrieval. The societal benefits of these services are immeasurable, having transformed how people find and make use of information on a daily basis.

Just as search engines have transformed how we access information, other forms of *big-data computing* can and will transform the activities of companies, scientific researchers, medical practitioners, and our nation's defense and intelligence operations. Some examples include:

BUSINESS DAY UNBOXED

How Big Data Became So Big

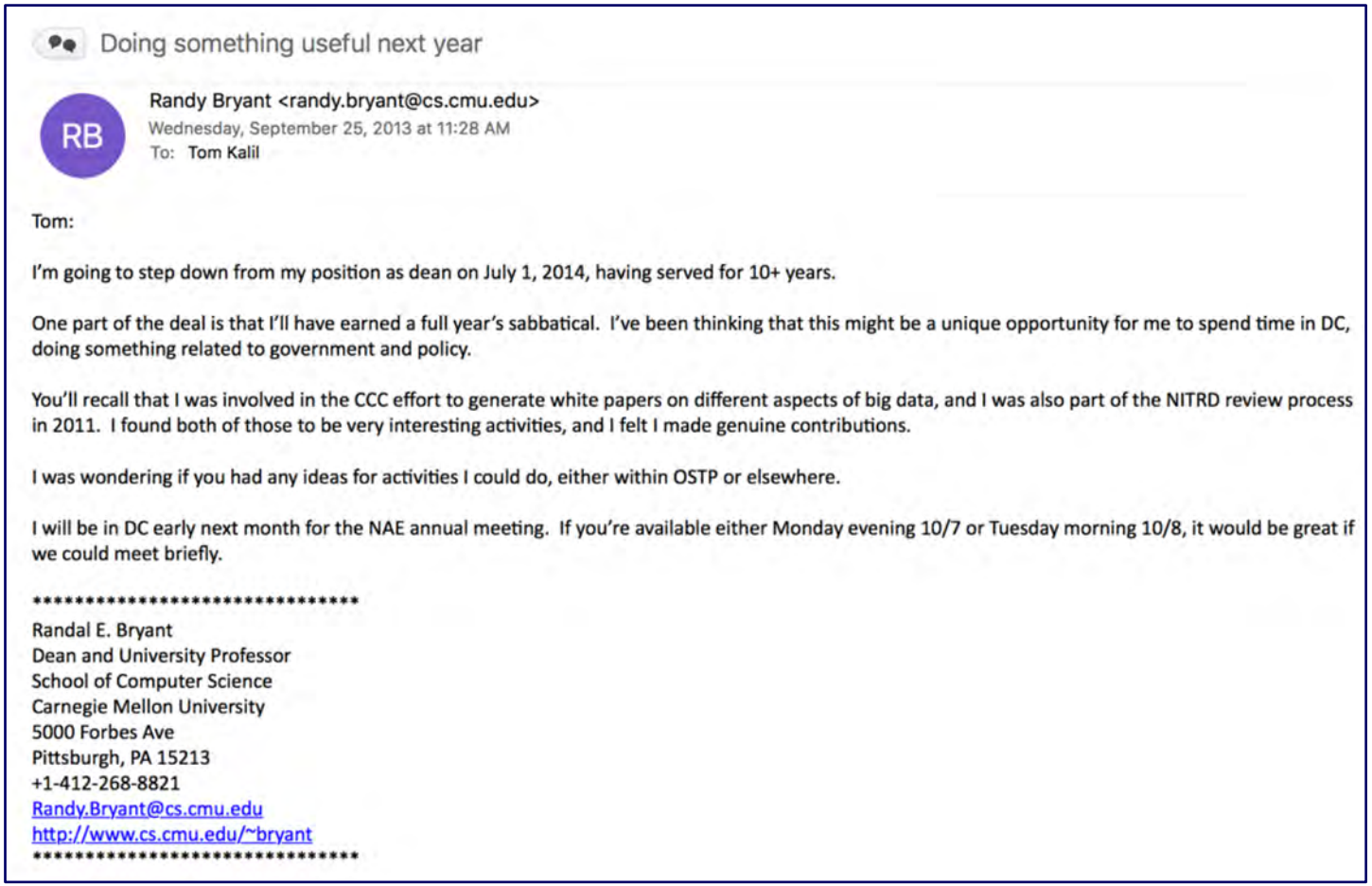
By **STEVE LOHR** AUG. 11, 2012

In late 2008, Big Data was embraced by a group of the nation's leading computer science researchers, the Computing Community Consortium, a collaboration of the government's National Science Foundation and the Computing Research Association, which represents academic and corporate researchers. The computing consortium published an influential white paper, "Big-Data Computing: Creating Revolutionary Breakthroughs in Commerce, Science and Society."

Its authors were three prominent computer scientists, Randal E. Bryant of Carnegie Mellon University, Randy H. Katz of the University of California, Berkeley, and Edward D. Lazowska of the University of Washington.

Their endorsement lent intellectual credibility to Big Data. Rod A. Smith, an

Finding Something To Do



Doing something useful next year

RB

Randy Bryant <randy.bryant@cs.cmu.edu>
Wednesday, September 25, 2013 at 11:28 AM
To: Tom Kalil

Tom:

I'm going to step down from my position as dean on July 1, 2014, having served for 10+ years.

One part of the deal is that I'll have earned a full year's sabbatical. I've been thinking that this might be a unique opportunity for me to spend time in DC, doing something related to government and policy.

You'll recall that I was involved in the CCC effort to generate white papers on different aspects of big data, and I was also part of the NITRD review process in 2011. I found both of those to be very interesting activities, and I felt I made genuine contributions.

I was wondering if you had any ideas for activities I could do, either within OSTP or elsewhere.

I will be in DC early next month for the NAE annual meeting. If you're available either Monday evening 10/7 or Tuesday morning 10/8, it would be great if we could meet briefly.

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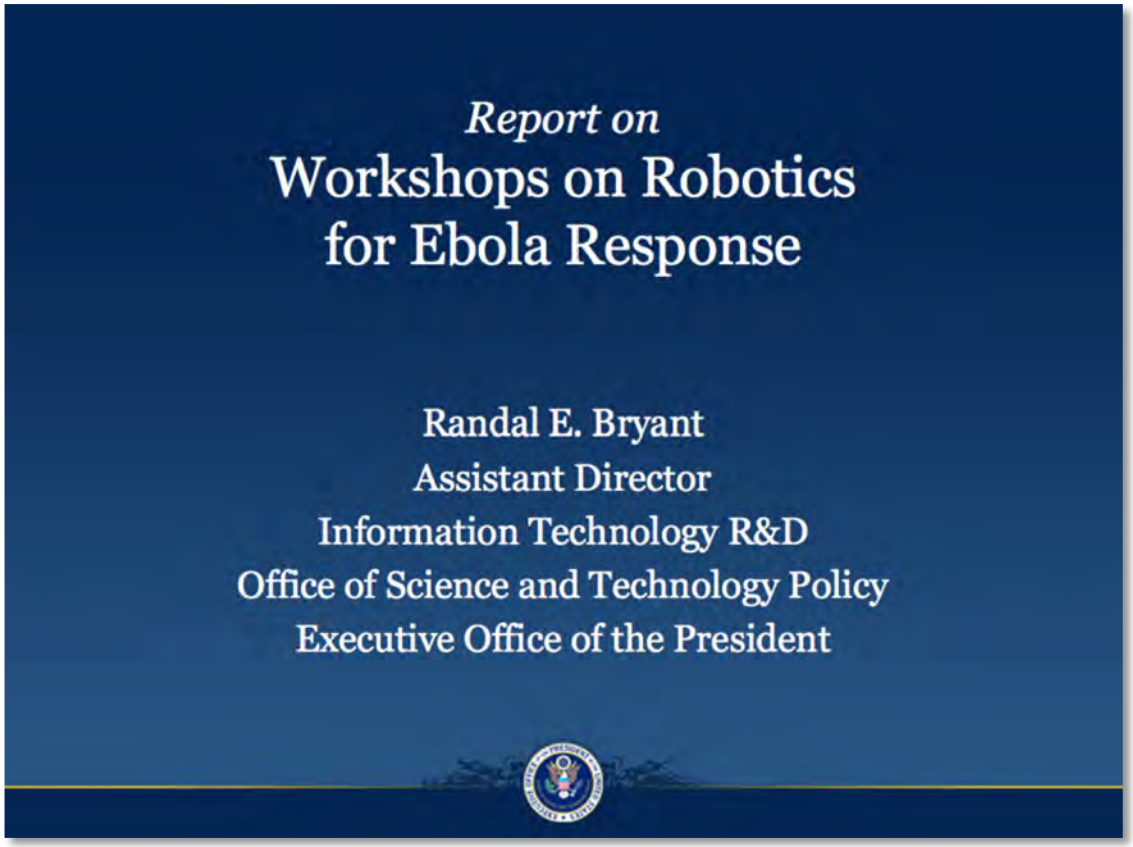
- **Didn't want real responsibilities**
- **Cost-of-living and travel support from ACM & CRA**

Arrival at OSTP

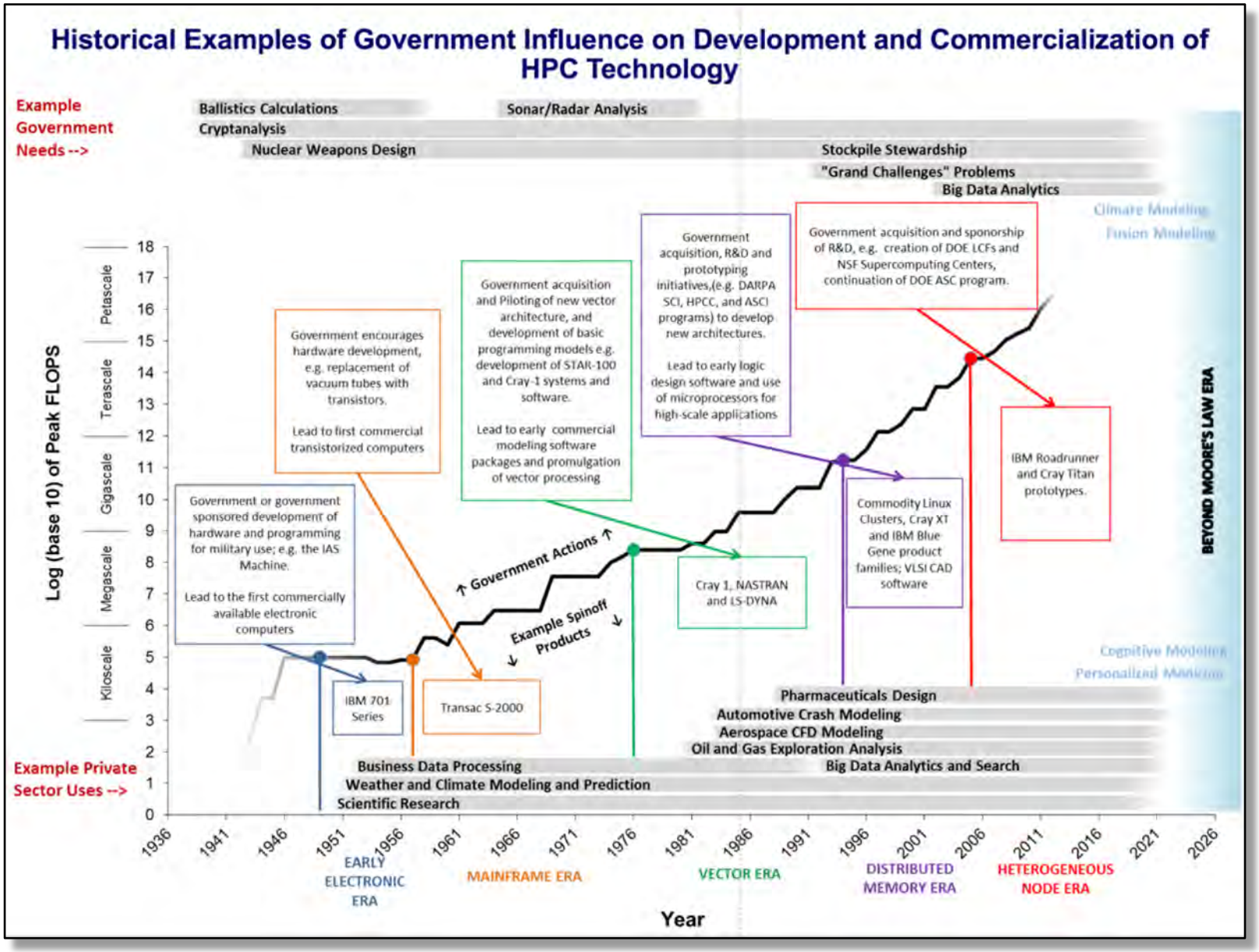
- **Science for policy**
  - How should government respond to Ebola epidemic?
- **Policy for science**
  - How can NSF & NIH coordinate funding for cross-disciplinary research?

Things I did #1

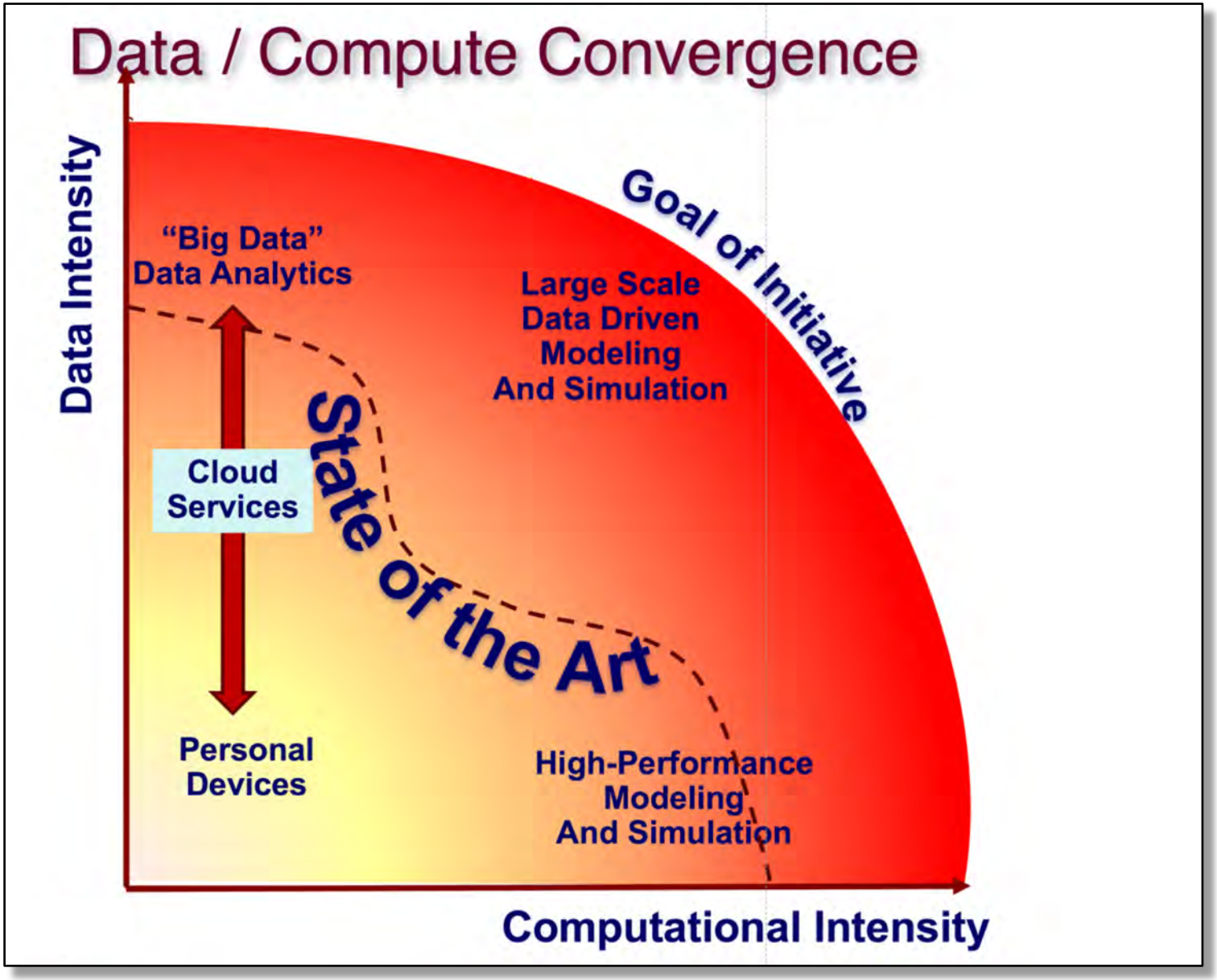


Things I did #2

Existing NSCI Information



My Version of NSCI



Executive Order July 29, 2015

EXECUTIVE ORDER

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CREATING A NATIONAL STRATEGIC COMPUTING INITIATIVE

By the authority vested in me as President by the Constitution and the laws of the United States of America, and to maximize benefits of high-performance computing (HPC) research, development, and deployment, it is hereby ordered …

The NSCI is a whole-of-government effort designed to create a cohesive, multi-agency strategic vision and Federal investment strategy, executed in collaboration with industry and academia, to maximize the benefits of HPC for the United States.

Wrapping Up

July 31, 2015

- **Continued part time until Dec, 2015**
- **Allowed wrapping up, while still having official title**

Things I did #3

Create a new type of computer that can proactively interpret and learn from data, solve unfamiliar problems using what it has learned, and *operate with the energy efficiency of the human brain*

The Benefits of Being in DC

Some Things I Learned

Opportunities are There

- Formal & informal programs
- Especially, if you have your own funding

Very Collegial Environment

- Scientists / nonscientists from broad spectrum
- Real interest in getting good policies in place

Being a Bureaucrat

- *Very* different from academia
- Lots of things you aren't allowed to do
- Lots of attention to little details ("will" vs. "may")
- Mostly work anonymously

Some Logistical Issues

IPA Assignment

- Must follow all rules for government employee
- Part-time status simplifies things

Security Clearance

- Interesting opportunities
- Serious responsibilities