Next

Ira A. (Gus) Hunt
Chief Technology Officer

Profound Change

is under way

Social

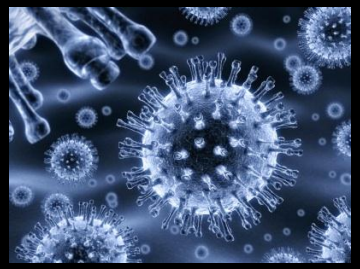
Mobile

Cloud

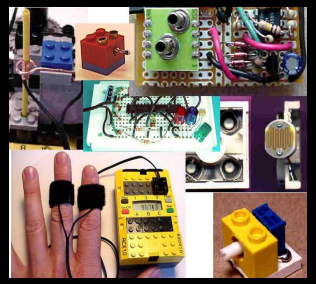

ALICE
IN CHAINS

Altered the Flow of Information

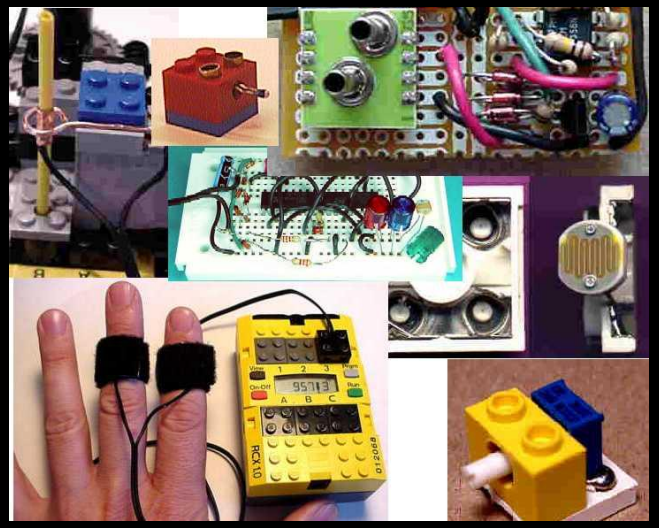
Nano



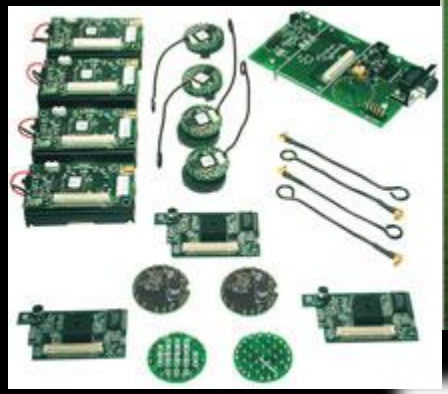
Bio

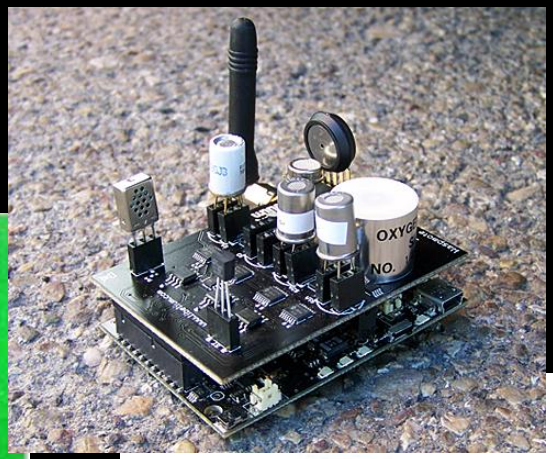


Sensors



The Internet of Things






CIO CHIEF TECHNOLOGY OFFICER
CTO
CENTRAL INTELLIGENCE AGENCY

Big Data

The Problem


MCHUMOR.COM by T. McCracken
DATA BASE OF USEFUL INFORMATION 5K
DATA BASE OF USELESS INFORMATION 500,000,000 GB
©T. McCracken mchumor.com

Our Problem: Which 5K

1 Don't know the future **value** of a dot **today**

2 We cannot connect dots **we don't** have

3 The **old** collect, winnow, dissem **model**

fails spectacularly in the **Big Data** world

The few cannot know the needs of the many

Secure the data, Connect the data, Empower the user

New Computing Architectures

New Fields of Expertise

Data Scientist
Information Engineer

6,998,329,787

is a small number

High Noon
in the
Information Age

It is nearly within our grasp to compute on all human generated information

FaceBook

> 1 billion users by August

The inanimate is rapidly becoming sentient

Smarter Planet

Cars drive themselves

Machines know your needs

3rd Wave of Computing

Learning Machines

Watson

Technology is moving faster than government can keep up

How can we successfully navigate and operate in this new world??

Our Approach

1. **Know** the **Business**
2. **Set** an overarching **Strategy**
3. **Establish** a **Framework** for execution
4. **Fund** and Implement with **Intent**

Our Mission

We are the nation's first line of defense. We accomplish what others cannot accomplish and go where others cannot go. We carry out our mission by:

Collecting information that reveals the plans, intentions and capabilities of our adversaries and provides the basis for decision and action.

Producing timely analysis that provides insight, warning and opportunity to the President and decisionmakers charged with protecting and advancing America's interests.

Conducting covert action at the direction of the President to preempt threats or achieve US policy objectives.

4 Big Bets

1 Big **Data**

- Acquire, federate, and position for multiple constituencies to securely exploit. Grow the haystack, magnify the needles.

2 Operational **Excellence**

- Innovate infrastructure operations and provisioning, create an authoritative source on our asset base, and run IT like a business.

3 **Serve CIA** by supporting the **IC**

- Assume a leadership role in IC activities that matter to CIA
- Build capabilities assuming they will be shared

4 Talent **Management**

- Focus on continuous learning and diversity of thought, experience, background

5 Key Technology Enablers

1 Advanced Mission Analytics

- World-class abilities to discover patterns, correlate information, understand plans and intentions, and find and identify operational targets in a sea of data

2 Enterprise Widgets and Services

- A customizable, integrated and adaptive webtop that lets analysts, ops officers, and targeters to “have it their way”.

3 Security as a Service

- One environment, all data, protected and secure using common security services such as: ubiquitous encryption, enterprise authentication, audit, DRM, secure ID propagation, and Gold Version C&A.

4 Enterprise Data Management--the Data Harbor

- An ultra-high performance data environment that enables CIA missions to acquire, federate, and position and securely exploit huge volumes data.

5 Cloud Computing

- Ruthlessly standardized, rigorously automated, dynamic and elastic commodity computing environment. Massive capacity ahead of demand. Speed for mission need.

Our Accelerated Technology Adoption Process

1. **Discover** the **Opportunities** (100)
2. **Evaluate** claims versus **Reality** (30)
3. **Pilot** with the **Mission** (10)
4. **Implement** (5)

Discover

Active External Engagement

VCs
Commercial Labs
Government Labs
In-Q-Tel
USG Contractors
Tech Expo
Showcase

Mission Link
Tech Connect
IC Partners
Other Agencies
Universities
Road Trips
Contracts

Evaluate

Unclassified and Classified Evaluation Facilities

iLab—unclassified, lots of data, variable hardware

Eval—high-side, on-desktop, real data, real users, defined hardware

NEAT—contracting mechanism to bring in capabilities from non-traditional vendors

Pilot

Real Problems, Real Users, Focused Outcomes

I2—the original IC "Cloud" proof of concept pilot

Mass Analytics Cloud (MAC)—high-side, big-data, real problems

Training—Cloudera, Hadoop, Developing for the Cloud

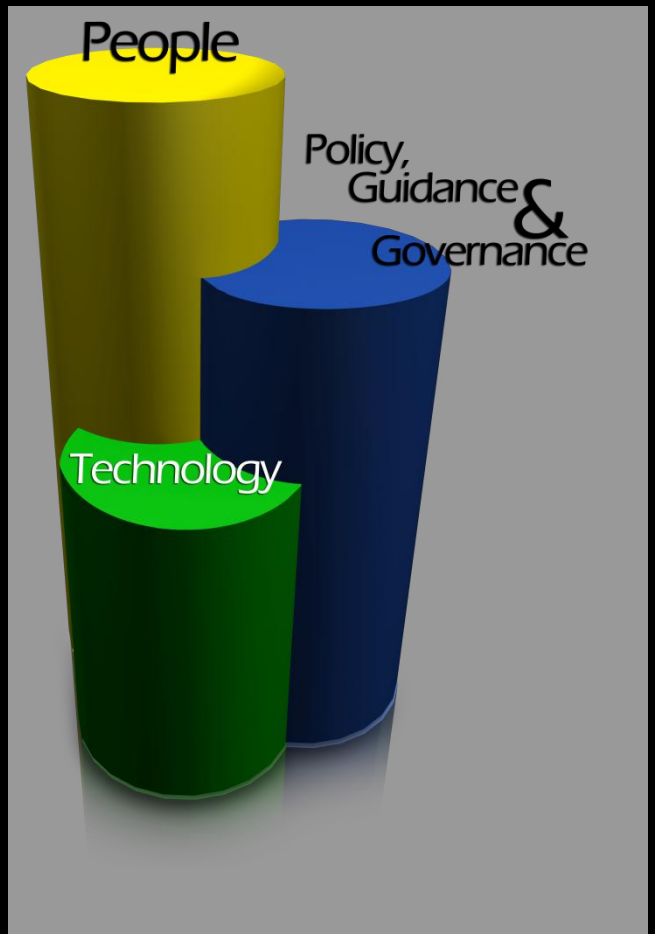
Road Trips—expose the pilot teams to best practices across sectors

Implement

Becoming part of our DNA

It's not just about Technology

- People and skills
- Architecture
- Governance
- Process
- Ruthless Standardization
- Complete change in Applications Development—think small, think horizontal
- Costing models
- Contracting models



Closing Thoughts

Challenges Ahead

- It's all about **speed**, latency breeds contempt
- Build a **continuous learning** organization
- Embrace **continuous change**
- Agility--become an "**Ahead of**" organization
- Software licensing—**metered services** and use, not ELAs