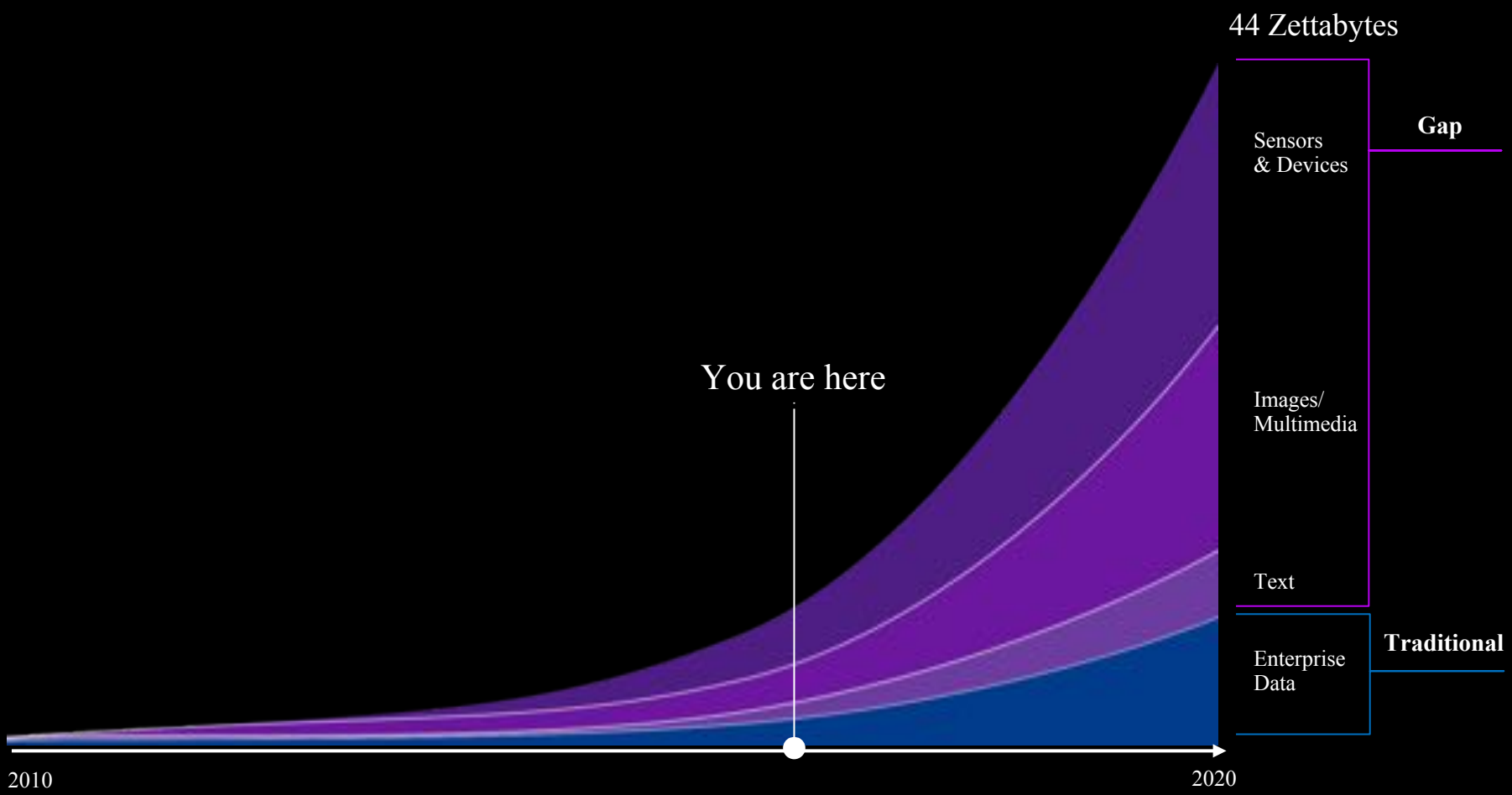
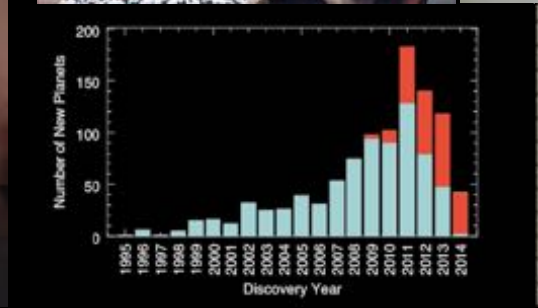
The Sustainable Development Goals, Techology ...and IBM

Kim Escherich | @kescherich | @danmark50
Executive Innovation Architect, IBM

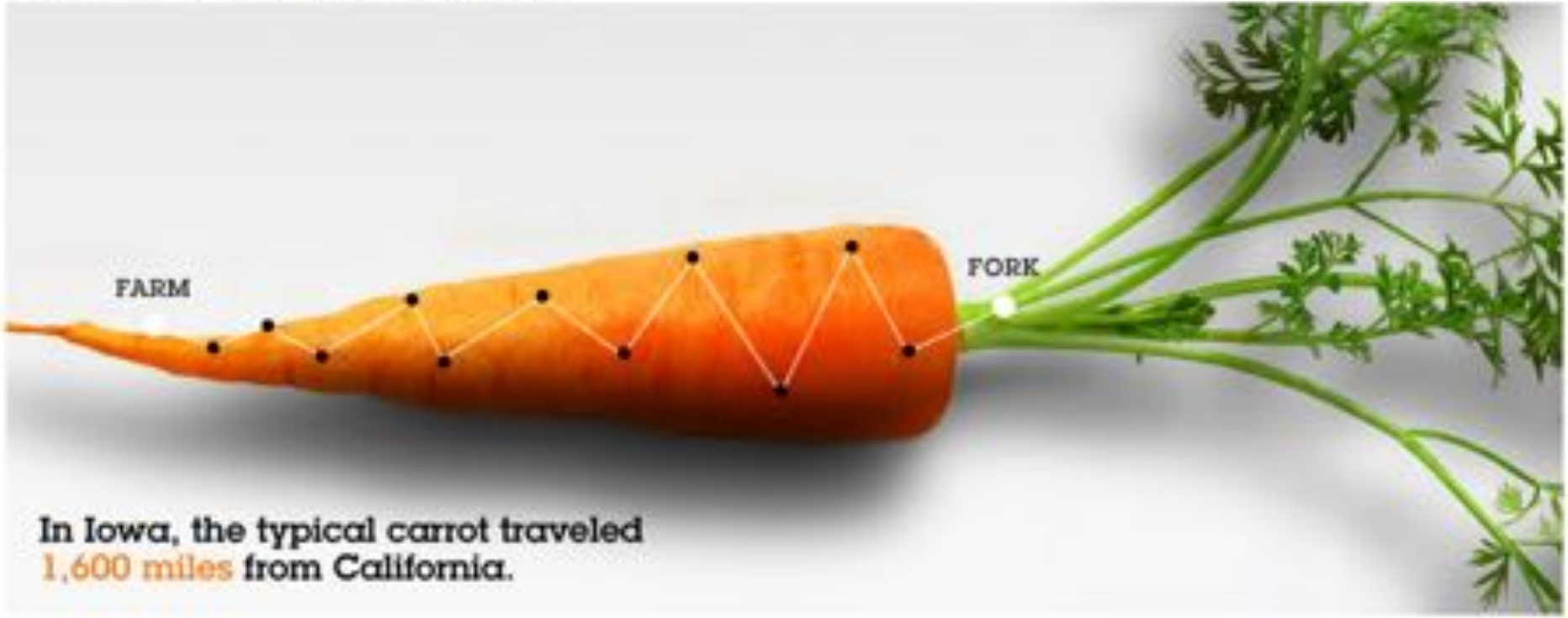
IT is everywhere


44 Zettabytes
Sensors & Devices
Images/ Multimedia
Text
Gap
Enterprise Data
Traditional
You are here
2010
2020

Camera stabilizing tech used in spoon for Parkinson's



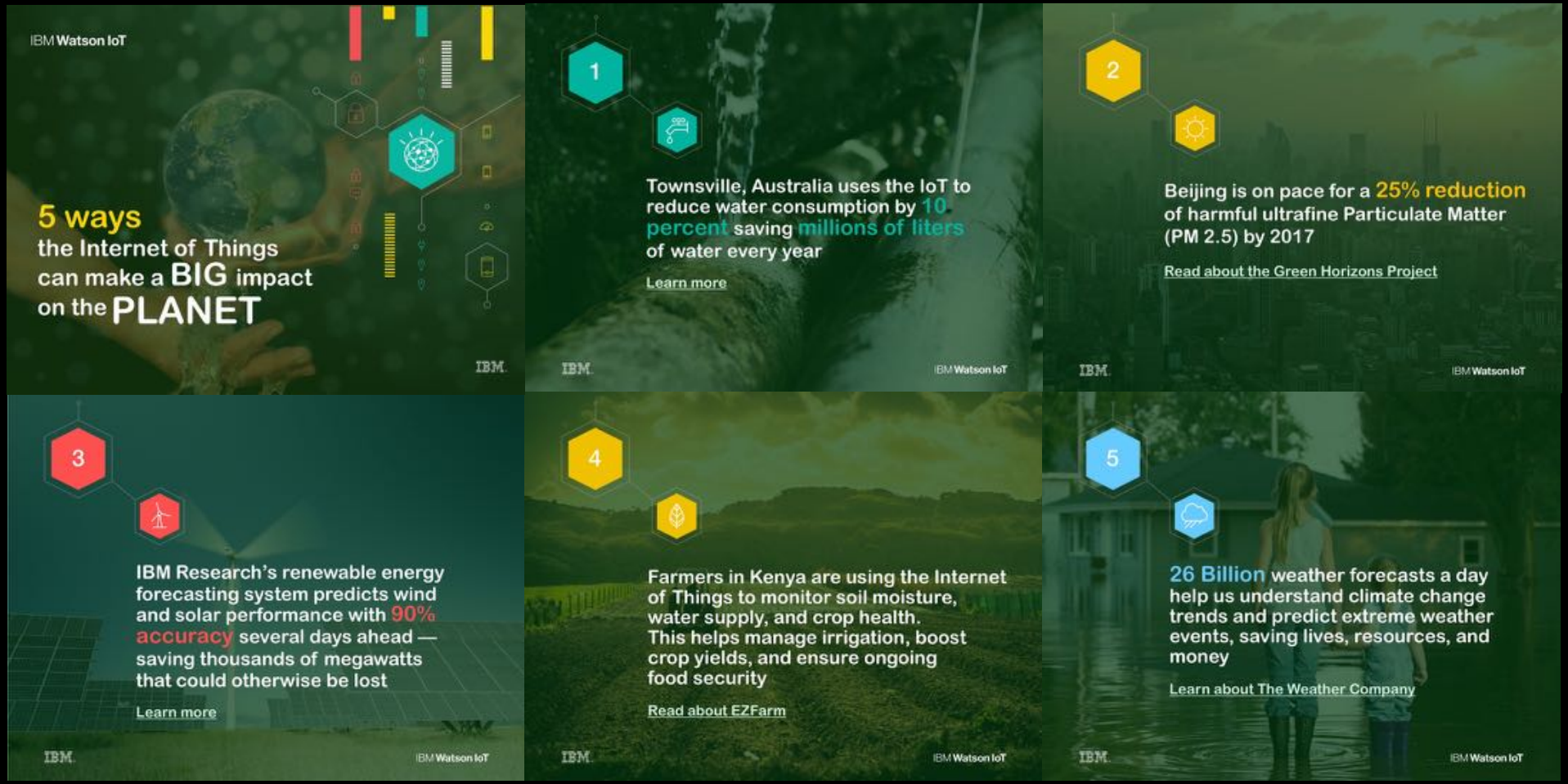
Improve via insight



What we do outside IBM

What we do inside IBM

http://www.slideshare.net/IBMIoT/5-ways-the-internet-of-things-is-impacting-the-planet



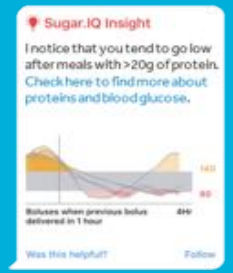
Bumrungrad
International
HOSPITAL

Medtronic Sugar.IQ App
Enable smarter diabetes management

Personalized Insights

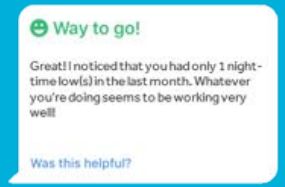
Glycemic Insights

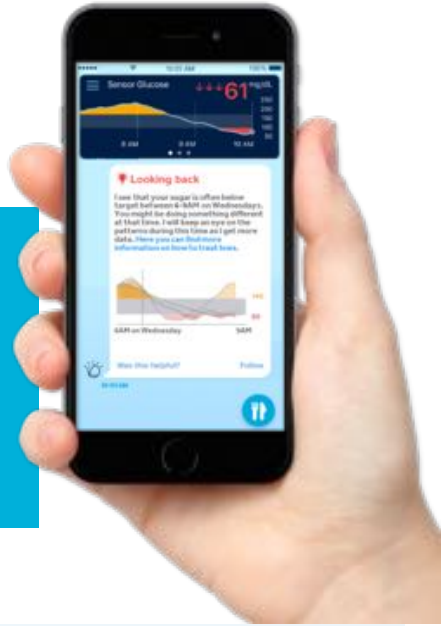
Uncover behaviors associated with glucose patterns



Motivational Insights

Encouragement to sustain positive outcomes





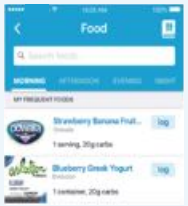
Comprehensive Platform

Glycemic Assist

Remembers patterns and displays unique sensor glucose responses

Smart Food Logging

Search and log meals to keep diabetes data in one place



My Data

Review device data and glucose metrics from the past to learn how to act in the future

Watson Health © IBM Corporation 2017

Dec 14, 2016: IBM's Watson supercomputer discovers 5 new genes linked to ALS
BARROW
RESERVED

Accessing a vast amount of untapped data could have a great impact on our health - yet it exists outside medical systems.

75%
Social Context, Behaviors
Impact on population health status

20%
Medical Care

5%
Genetic

1100 Terabytes
Generated per lifetime
Consumer-contributed data from non-medical sources: wearables, social media activity, public records

6 Terabytes
EMR, EHR, claim systems

0.4 Terabytes
Genetic research, personalized medicine, clinical trials

SOURCE: Barbara J. Sowada, *A Call to Be Whole: The Fundamentals of Health Care Reform*, July 30, 2003, Praeger.

UNDER ARMOUR

DIGITAL DELTA

USING BIG DATA TO TRANSFORM MANAGEMENT OF THE DUTCH WATER SYSTEM AND HELP KEEP THE COUNTRY SAFE

IBM

WATER AROUND THE WORLD

€600 million
European annual expected loss from storm surge for North Sea countries

€37 billion
Estimated damage of Hurricane Sandy

€8 billion
Germany's aid fund for June 2013 floods

€8.7 billion
Costs of 2003 drought to the EU economy

HOW FLOODS IMPACT NETHERLANDS

16,496 km
Extent of Dijkwaterskering dikes - one of the most extensive engineering projects in the world

€7 billion
Annual water management costs + incremental €2 billion per annum

66%
Population living in flood prone areas

Rotterdam
Largest European logistics hub which supplies 75% of Western Europe

70%
Percentage of GDP at risk from flooding

1:10,000
The Dutch protective system is designed for 1 in 10,000 years flood event

DROUGHT BRINGS CHALLENGES TOO

€400 million
Annual average losses to Dutch agriculture due to drought

€5 billion
Damage to infrastructure due to low groundwater levels. May increase to €40 billion by end of century

Up to 19%
Average decrease in capacity of power plants in Europe due to drought

KEEPING DATA FLUID

20%-30%
Potential cost reductions of managing Aquras water projects

75%
Reduction in scientific research & development time due to smarter collaborative sharing

32 terabytes
Potential volume of data produced by a single water management project (approx. 7 billion pages of text)

2 million
Streaming sets of data produced by 400 monitoring stations every day

Abidjan, Côte d'Ivoire

Transport

- **439 buses** for formal operator with 17 express and 67 routes for **5 million residents**
- 5,000 taxis and 11,000 mini-buses for informal operators
- Informal transport fills the void that the operator cannot meet at lower costs but with negative outcomes

Mobile phone data

- **13.3 million cell phones** in Cote d'Ivoire (2009)
- Orange D4D challenge released
  - Mobility patterns from **2.5 billion** anonymized call records (calls and SMS)
  - Data for **5 months** between 407 antennas in Abidjan

Safety

Congestion

From precision agriculture to ‘EZ Farmer’

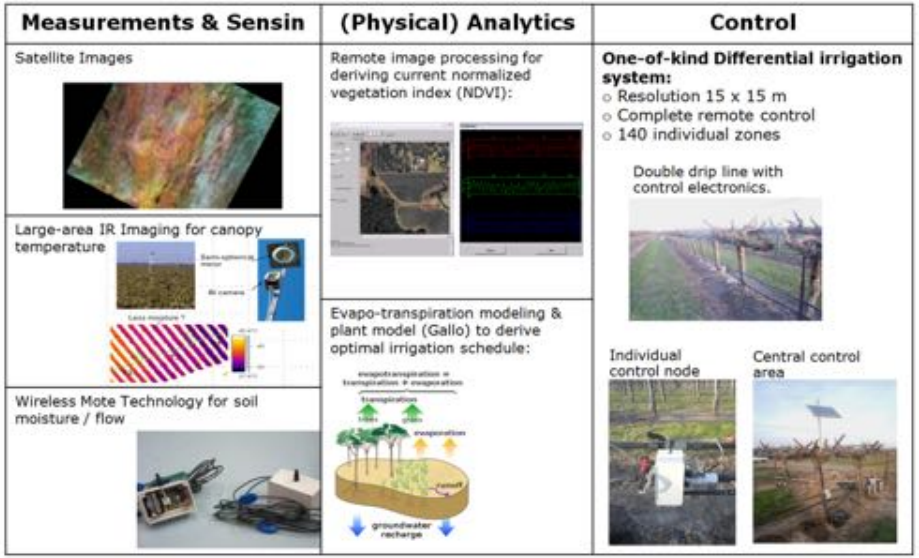
IOT brings inclusive access to real-time and predictive water and soil insights

A killer app for Africa's 'telephone farmers' - watch your plants grow, from your mobile or computer screen

IBM & E & J Gallo Wines

Precision analytics to improve crop yields while reducing water consumption

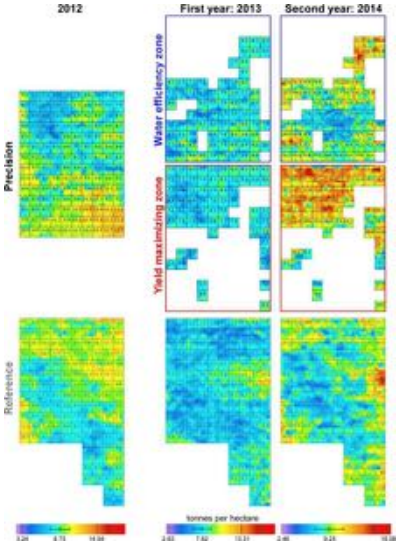
Innovation



Impact

- 26% more yield in the precision area compared to conventional one
- 11 % higher water efficiency
- 50 % higher uniformity
- Improved quality index (Brix value)

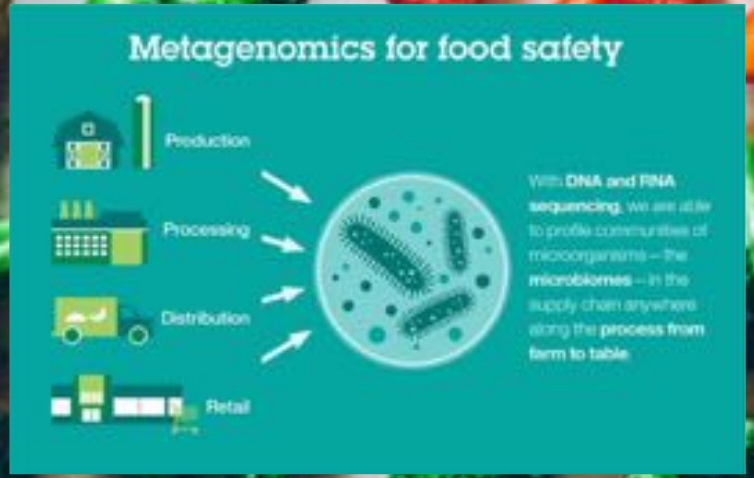
- Technology provided to all of Gallo's vineyards provides $120M of annual value (100,000 acres x $1.0k) = $100M)

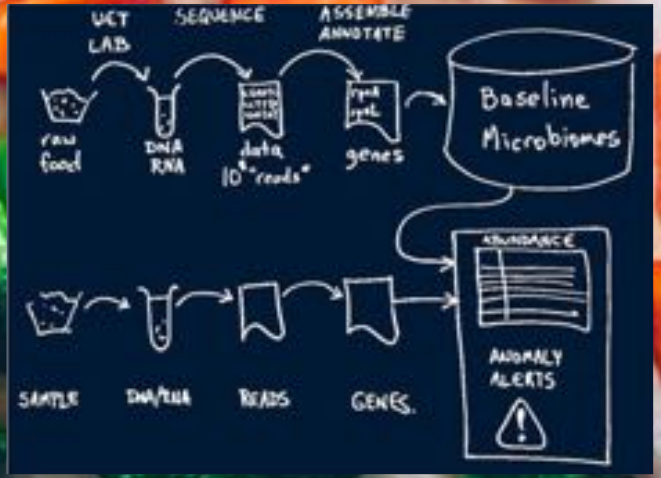


IBM Food Blockchain Consortium

IBM Consortium for sequencing the supply chain

Surveillance, risk assessment, and diagnosis of food borne pathogens across the food supply chain using a scientific approach





https://www.ibm.com/ibm/responsibility/2016/index.html

A few facts

- Sustainability polity formulated in 1971
- IBM is the only two-time winner of the EPA's climate protection award
- IBM estimates that it saves $1.60 for every $1.00 that it invests in sustainability initiatives
- IBM's internal energy efficiency programs have saved 4.6 billion kilowatt hours (kWh) of electricity consumption, avoided nearly 3.1 million metric tons of CO2 emissions (equal to 45 percent of the company's 1990 global CO2 emissions) and saved over $310 million
- IBM established an equal pay policy for men and women in the 1930's, and an equal opportunity policy 11 years before the Civil Rights Act became law.
- We were among the first companies to include sexual orientation as part of our Equal Opportunity policy, and we extended domestic partner benefits to gay/lesbian employees in the U.S. almost 20 years ago.
- We now offer a variety of benefits in 53 countries to same-gender domestic partners or spouses. This year alone we announced the launch of same-gender partner benefits in 11 countries.

”Today, I am proud to introduce a new symbol that will represent IBM’s ongoing push for diversity, acceptance, inclusion and equal opportunity – a rainbow version of our iconic 8-bar logo.”

Lindsay-Rae McIntyre, Chief Diversity Officer, IBM

783,000

Megawatt-hours of electricity

In 2016 we purchased 783,000 MWh of renewable electricity (beyond what's already provided from the grid), representing 21.5 percent of our global consumption.

20,000,000

Volunteer hours

Since 2003, over 275,000 IBMers have shared more than 20 million hours of community service, transforming communities in more than 120 countries.

2,200

Impact Grants

Over the past seven years, 5,000 IBM consultants have delivered 2,200 Impact Grants worth $65 million to 1,500 nonprofit organizations in 60 countries.

Science for Social Good

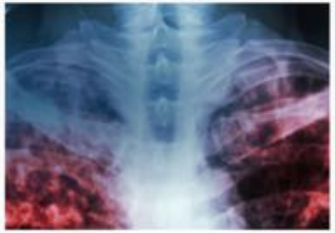
New initiative partners IBM Research scientists and engineers with academic fellows and experts from NGOs to tackle emerging societal challenge.

Cognitive computing and the public good

AI offers new capabilities to help address societal challenges that can benefit us all.

IBM CEO honors employee volunteers

Each year we recognize volunteers who best exemplify the IBM values of dedication, innovation and trust in their community support.



Tech fights tuberculosis

World Community Grid's newest project seeks to understand potential vulnerabilities of the tuberculosis bacteria.

Introducing IBM Health Corps

Starting in 2016, IBM will dispatch interdisciplinary teams around the world to help improve the quality of and access to healthcare.

Helping not-for-profits analyze data

IBM SafetyNet, an IBM grant program, helps not-for-profits collect, access and analyze client data quickly and efficiently.

Technology for a green planet

Green Horizon is a 10-year initiative using advanced technologies to improve air quality management and renewable energy forecasting.

Closing the gap in STEM skills

P-TECH is an innovative public-private model that connects secondary education directly to college and career.

Building a 21st-century workforce

IBM recruits a diverse global workforce and maintains a range of programs to help all IBMers realize their full potential.

Education

P-TECH

Pathways in Technology Early College High Schools (P-TECH) is a system of innovative public schools from grades 9 to 14 that bring together the best elements of education and career.

Veterans

This program offers returning veterans IBM i2 Analytics Software training, opportunities for data analyst certification, and career placement assistance in this growing field.

Teacher Advisor With Watson

Launching in 2016, this breakthrough application uses IBM Watson cognitive computing technology to provide teachers with guidance and mentorship.

Teachers TryScience

Teachers can access hundreds of free lessons, teaching strategies and resources designed to spark students' interest in science, technology, engineering and math.

University Relations

IBM provides access to software, course materials and experts to help universities improve and extend their curricula, focused on skills students need in today's job market.

Roskilde Festival
Big Data Hackathon 2017

IBM's Point of View on sustainability

- Sustainability strategy is an integral component of business strategy and can act as a competitive differentiator.
- Assessing business processes through a sustainability lens can help identify significant opportunities. There is often a compelling business case to pursue sustainability initiatives based on economic considerations alone.
- The fact that sustainability initiatives produce reputational, environmental, and social benefits (e.g., talent attraction, enhanced reputation, etc) makes the case for investment even more compelling.

High carbon emissions=indicator of inefficiency

Reduced carbon=$$$ savings

Kim Escherich
escherich@dk.ibm.com
+45 2880 4733
internetofthings.dk

@kescherich | @danmark50

/in/escherich