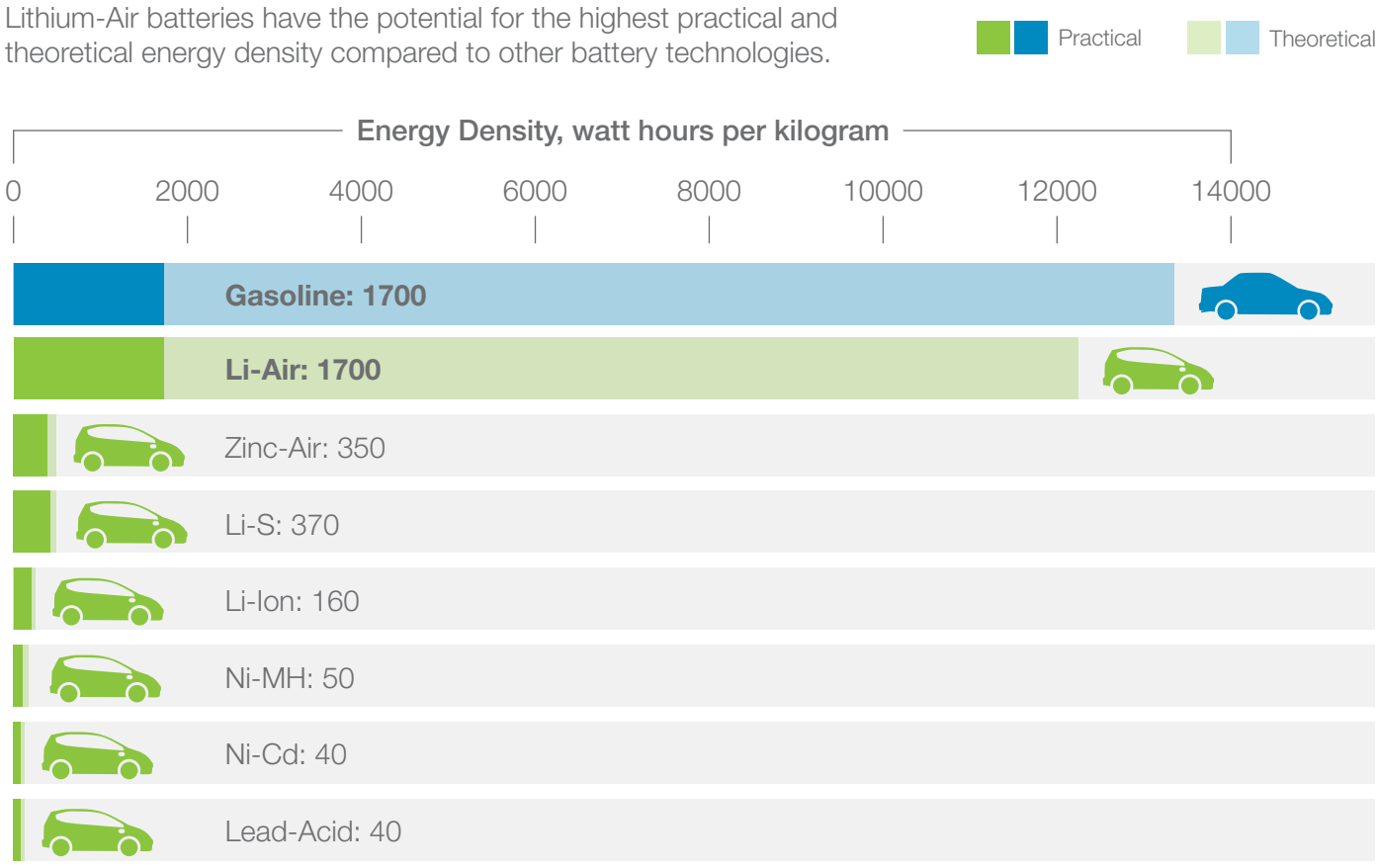
How far do you want to go?

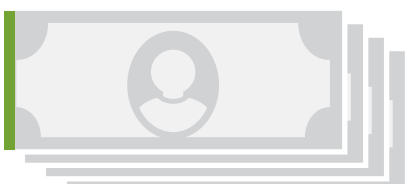
Today's electric vehicle batteries can power a family sized car for 100 miles on a single charge, but use heavy, expensive materials that put the brakes on long distance traveling. With lightweight, oxygen-breathing lithium-air batteries, electric vehicle drivers could have the luxury of traveling up to 500 miles on a single charge.

Lithium-Air batteries have the potential for the highest practical and theoretical energy density compared to other battery technologies.



.03¢ per mile

.16¢ per mile



At $4 per gallon, the cost per mile is more than

4x

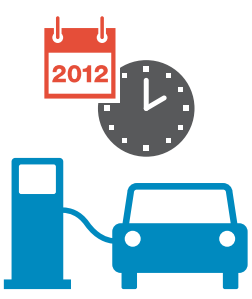
cheaper for an electric car

People could save almost

15

hours a year

at gas stations by owning an electric vehicle and charging their car at night



The average consumer spends

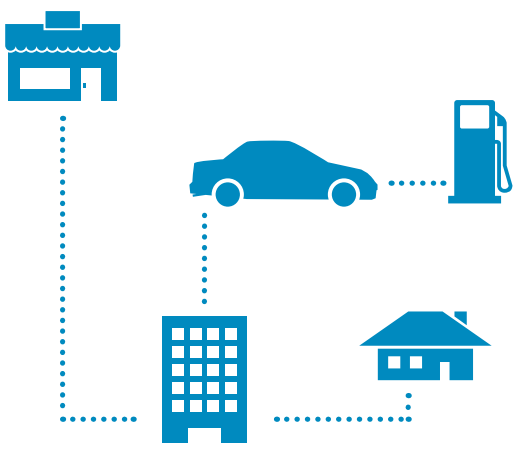
500

minutes per year at a gas station[1]

The average consumer goes to a gas station nearly

1

time each week[1]



The average consumer spends

334

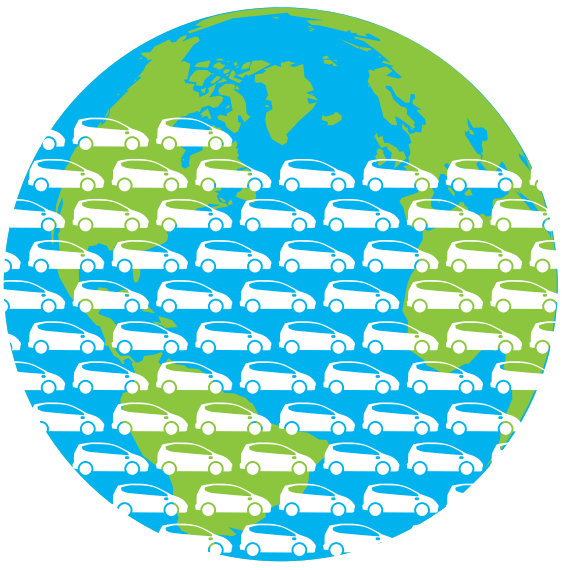
minutes per year dedicated driving time to/from gas stations (off of normal work, school, social, shopping routes)[1]

[1]Source: The Envisioneering Group Consumer Metrics, SAE, AAA, DOT, DOC 2010

IBM

Does your electric vehicle have a charging plan?

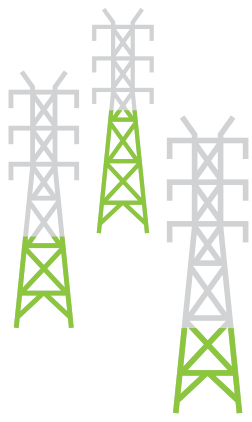
With electric vehicle models multiplying fast, the next big challenge is to scale-up the national charging infrastructure and ensure grid readiness. A first-of-a-kind project led by IBM, Honda and Pacific Gas & Electric Company (PG&E) will demonstrate and test an electric vehicle's ability to receive and respond to charge instructions based on the current grid condition and the vehicle's battery state.



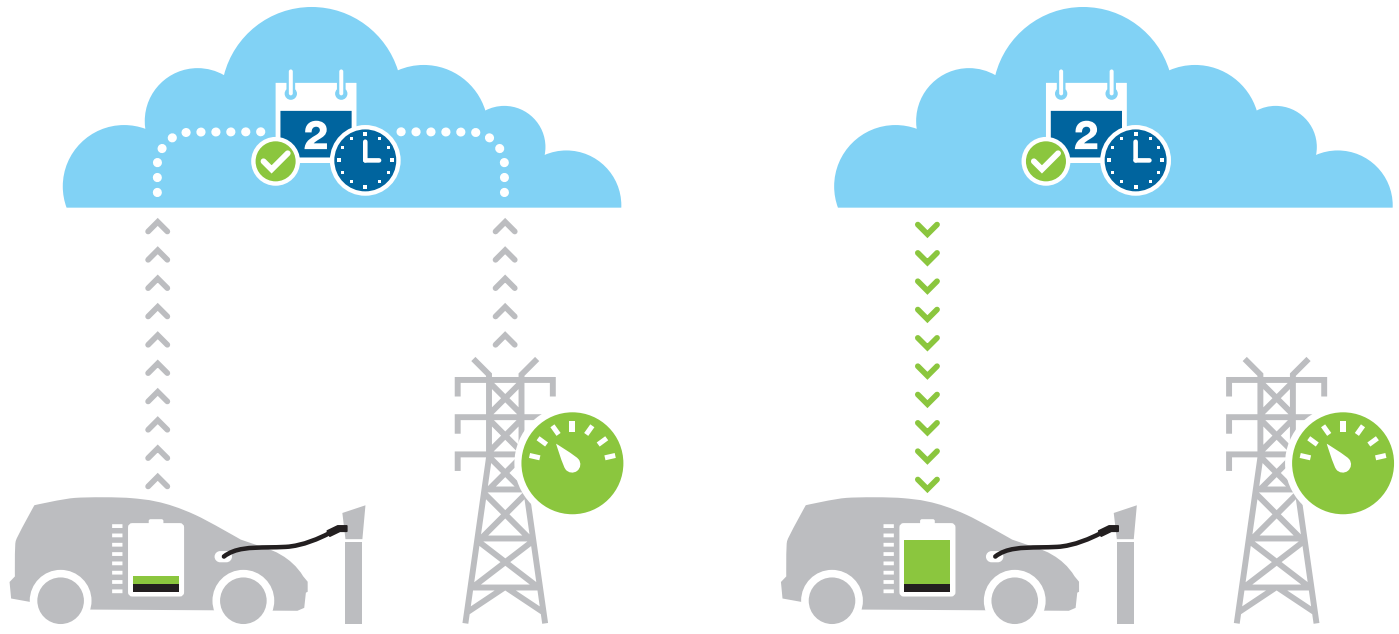
The number of electric vehicles will continue to grow to an expected

2.9 million

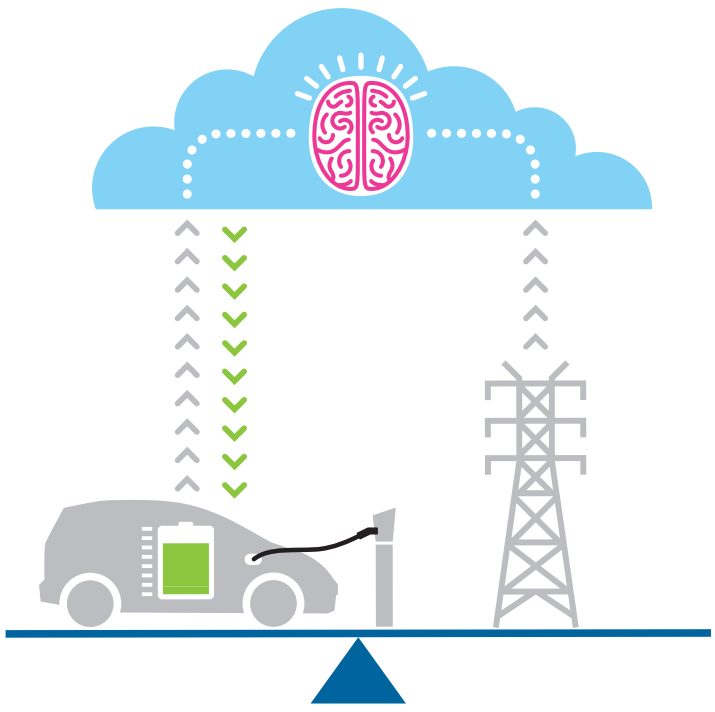
worldwide by 2017 placing added strain on the power grid.[1]



Grid and vehicle data is combined to create an optimized charging schedule using IBM's cloud-based software platform. This schedule is then directly communicated back to the electric vehicle in seconds—providing it with the intelligence to charge to the right level, at the right time.



This smart charging capability will enable energy providers to manage and balance power grid loads during peak times by continually instructing the vehicles to delay or adjust charging if required.



[1] Pike Research

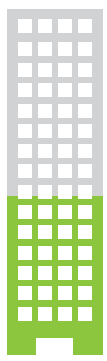
IBM

What is the state of social technologies in your organization?

IBM surveyed 1,160 business and IT professionals to understand the state of social business adoption to take a pulse on how organizations are tapping **the power of social technologies to advance business objectives.**

The value of social business is increasing within organizations.

46% of the companies surveyed **increased their social business investments** in 2012.



Companies that are emerging as social business leaders are applying the technologies to drive **customer-facing activities** such as lead generation, sales and post-sales service.

Despite the accelerated adoption of social technologies, **middle managers** who are being called on to implement these technologies are facing challenges.

2/3 of respondents are not sure they **sufficiently understand the impact** that social technologies would have on their organizations over the next three years.

There are different perspectives within management. Only 22 percent believe that middle managers are prepared to incorporate social technologies into their daily practices, while 48 percent of organizations indicate they have support from the C-Suite.

22% **Middle Managers**

48% **C-Suite**

For organizations to evolve into social enterprises, some basic groundwork must be laid.

Provide an infrastructure for **engagement** like setting up forums, teamrooms and collaborative spaces.

Integrated **social practices** into day-to-day work activities like using blog posts and activity streams to positively accentuate project management tasks.

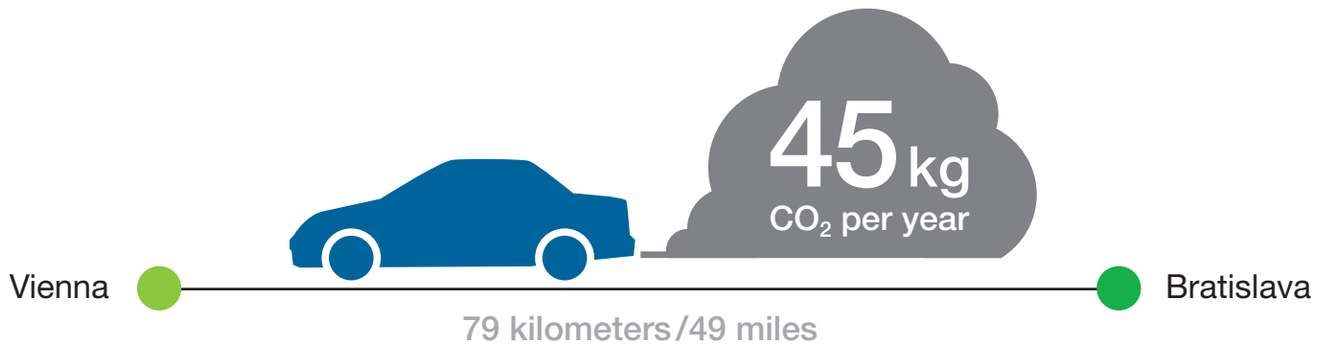
Understand where and how **data generation** could benefit the enterprise.

Teach employees how to **collaborate effectively** with individuals outside of the organization's boundaries using social business methods and tools.

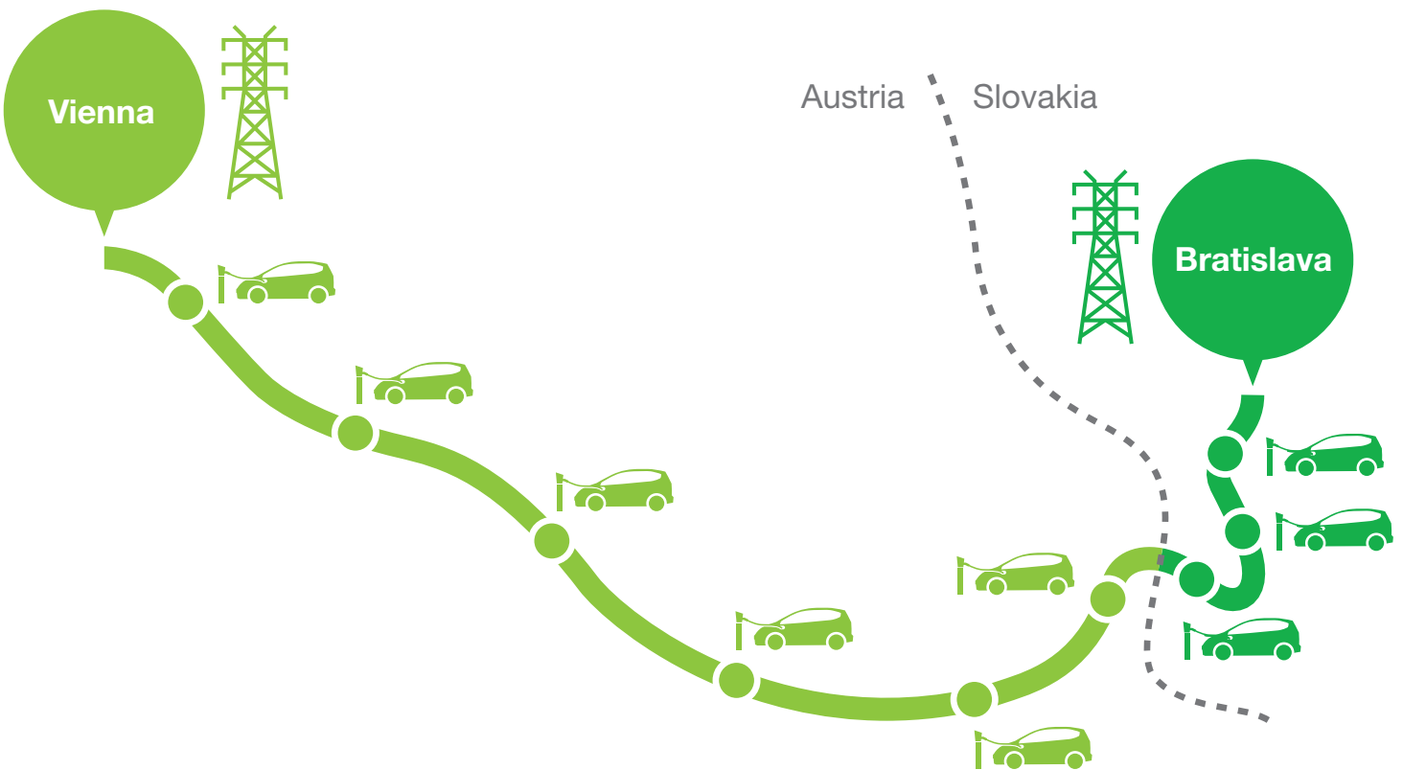
IBM

Feeling blue for not traveling green?

Currently, the average combustion engine produces about 45 kg of CO_2 per year during the route from Bratislava, Slovakia to Vienna, Austria, a distance of about 79 kilometers.



IBM and ZSE, the largest distributor and supplier of electricity in Slovakia, are using e-mobility technology to develop a smarter energy study that will identify the possibilities of connecting two neighboring metropolitan areas with a "green" highway. This highway will interconnect the two cities with a network of public charging stations for electric vehicles with the goal to minimize stress on the power grid, reduce green house emissions and encourage more consumers to plug-in.



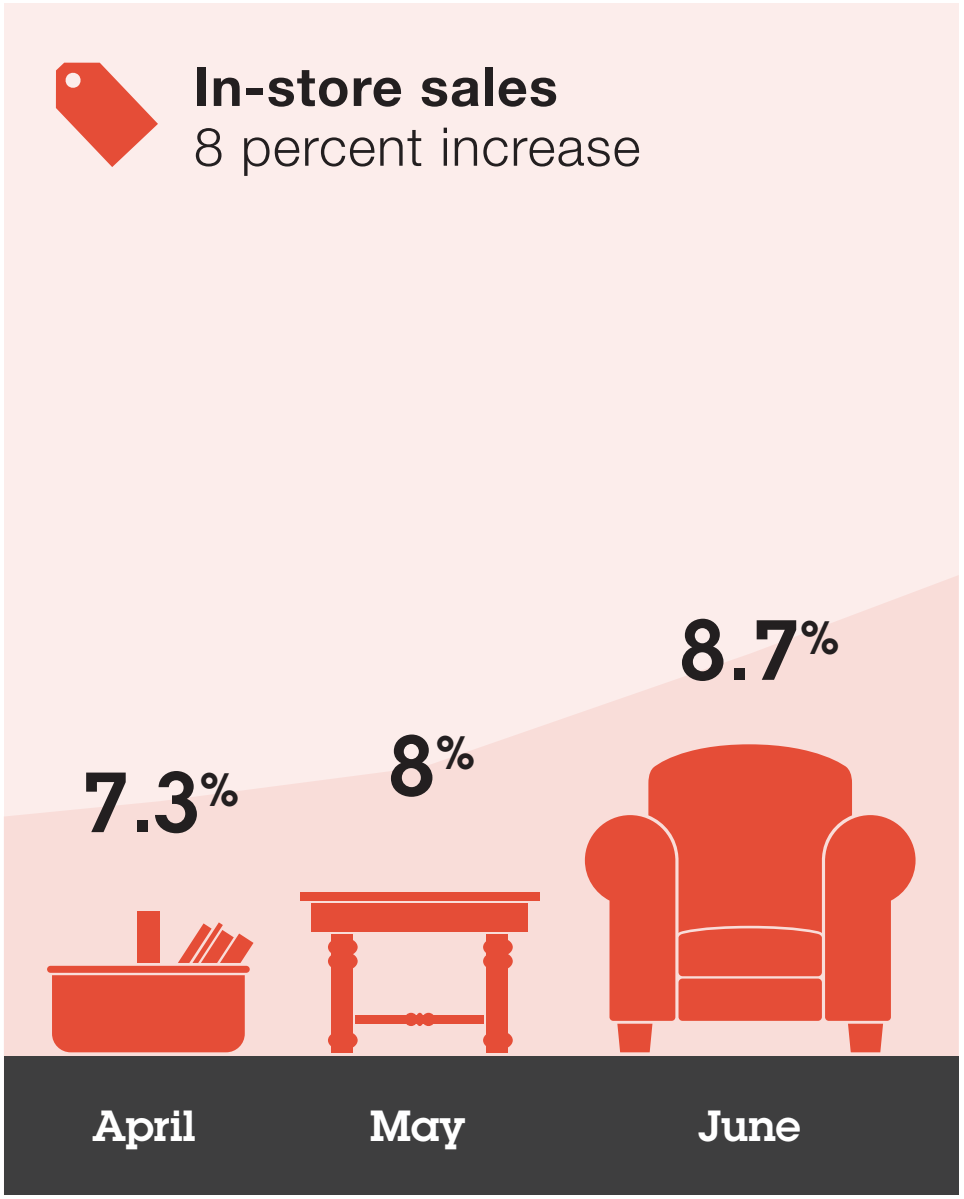
[1] Pike Research

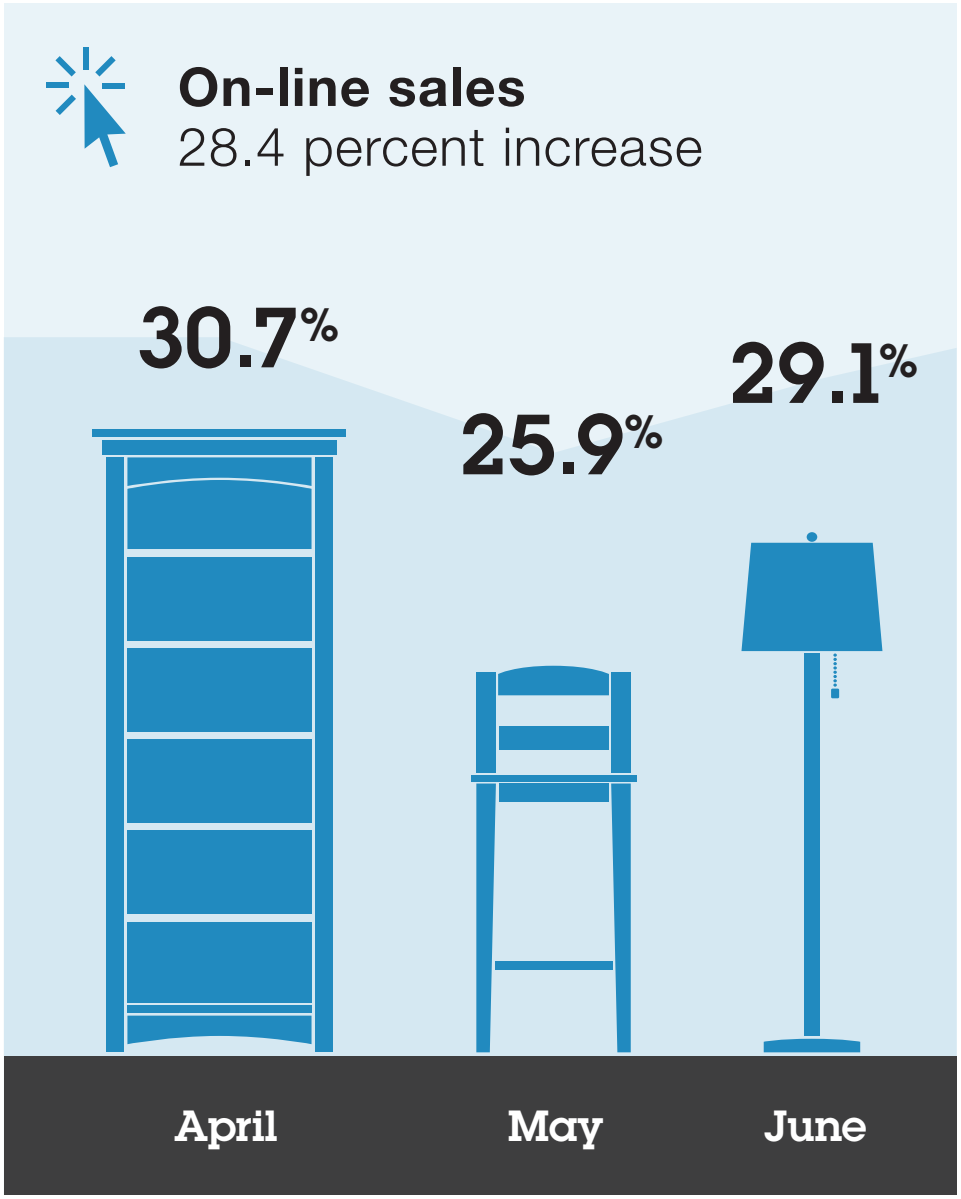
IBM

Home furnishings sales to rise

2nd quarter looks strong

IBM





IBM's Growth Market Expansion

Nearly 100 new IBM branch offices opened in growth markets since the beginning of 2011

Nearly 60% of IBM's growth markets revenue is now **outside the BRICs** (Brazil, Russia, India, China)

Revenue from growth markets will approach 30% of **total geographic revenue by 2015**

IBM

World Community Grid

600,000 volunteers

in 80 countries

using 2 million PCs

By pooling resources, IBM World Community Grid PCs have performed computations in the equivalent of

500,000 years

to help process 21 research projects

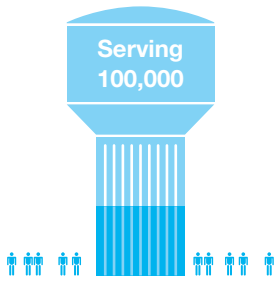
IBM

Is the world thirsty for water management?

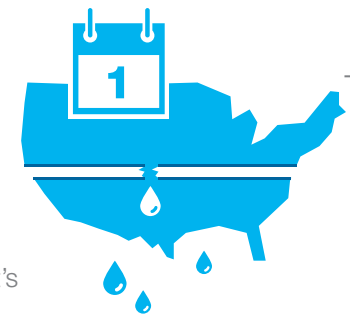
The World Bank estimates that global costs from leaky water pipes total $14 billion annually. Our water infrastructure, in service for upwards of 100 years in many regions, is under pressure, to say the least.

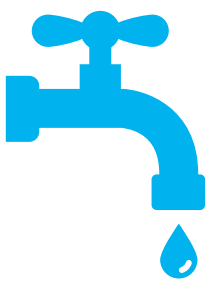
Worldwide, up to **60%** of water is lost due to leaky pipes—to the tune of **US$14 billion every year.**[1]

30% of the pipes are between **40 and 80 years old** in water systems that serve 100,000 or more people.[2]



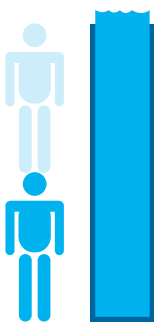
In the United States alone, an average of **700** water main breaks occur every day—that's **240,000 per year.**[3]

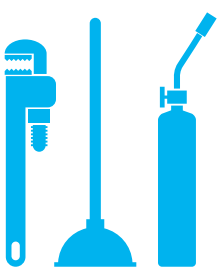




A faucet that drips just **once per second** wastes **27,000** gallons of water annually.[4]

Water use has been growing at more than **2x** the rate of population increase in **the last century.**[5]





The total estimated cost to fix U.S. water systems is **$335 billion** over **20 years.**[6]

Global water usage continues to increase at twice the rate of population growth. Clearly, something must be done to better manage our water supply for a sustainable future. To find out how, visit ibm.com/smarterplanet/water

[1] Environmental Protection Agency
[2] Environmental Protection Agency
[3] Environmental Protection Agency
[4] American Society of Civil Engineers
[5] United Nations
[6] Environmental Protection Agency

IBM

Out of Africa: IBM Innovations

Innovations in Africa are equipping governments, businesses and people with tools to improve lives in ways never before possible.

Next-generation mobile phone services will **connect millions of people** across 17 African countries

Consumers can use mobile phones to **fight drug counterfeiting** by verifying prescriptions in seconds

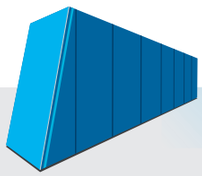
Information technology services are **reducing infant mortality** and increasing levels of literacy among the poor

Mobile phones are providing first-ever **mobile banking services** to millions of people

Improving public safety in cities through better coordination of crisis and emergency response

IBM

IBM grand challenges



The next era of computing

Deep Blue

Designed to play the complex, strategic game of chess. It defeated the world chess champion in a match that lasted several days.

1997

IBM Deep Blue® could explore up to

200 million

possible chess positions per second on 510 processors.

Deep Blue was capable of processing

1 trillion

operations per second with its special purpose hardware.

Blue Gene

Developed to help biologists observe the invisible processes of protein folding and gene development. It was the world's fastest supercomputer.

2004

IBM Blue Gene®/L used 212,992 processors to routinely handle

478 trillion

operations **every second**.

Blue Gene was ranked

#1

on the top 500 list of the world's supercomputers, **7 times in a row**.

Watson

Built using advances in natural language processing and analytics. It competed and won in the first-ever man vs. machine *Jeopardy!* competition.

2011

IBM Watson™ can analyze roughly

200 million

pages of data to provide responses **in about three seconds**.

Since 2011, IBM has been collaborating with **healthcare, finance and other industries** to use tools based on Watson to solve their most challenging problems.

The explosion of big data

In the 15 years since Deep Blue, the world has seen epic growth in the volume and variety of data. This data is increasingly unstructured and comes from everywhere: digital pictures and videos, purchase transaction records and cell phone GPS signals to name a few. Due to a solid foundation of innovative technology going back to Deep Blue, IBM is now better equipped to make sense of big data to solve the latest challenges in our world.

90%

of the data in the world today has been created in the last two years alone.

More than 90% of data will be unstructured in 2012.[1]

Global Internet traffic	**70 million** Internet users[2] **5 petabytes** of data/month[3]	**817 million** Internet users **1,267 petabytes** of data/month	**2.2 billion** Internet users **20,634 petabytes** of data/month

[1] IDC
[2] Internet World Stats
[3] Wikipedia: Global Fixed Internet Traffic

IBM

IBM's Tale of the Tape

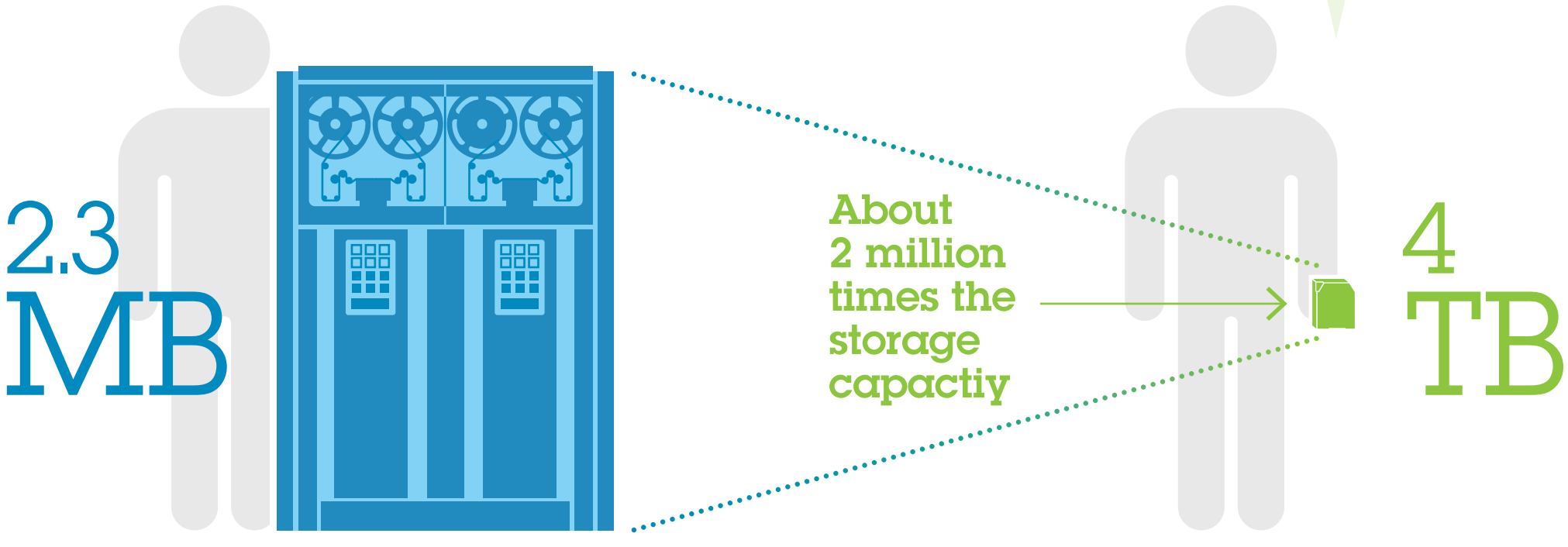
60th Anniversary of IBM Tape Innovation

1952

IBM introduces the IBM 726 magnetic tape drive as a new way to store computer-generated data. The device features a unique innovation called a "vacuum column" that creates a buffer of loose tape. This buffer solves tape's original shortcoming of being too brittle to withstand the drive's fast starts and stops.

2012

Today IBM's highest capacity tape drive is the IBM TS1140 that can store up to 4TB of data. This unit is just the latest example of IBM's continued innovation in magnetic tape. In 2010 IBM Researchers in Zurich broke the world record for tape density by recording 29.5 billion bits on a square inch of tape. Such an advance would create a tape drive with a capacity of a whopping 35TB.[1]



935 lbs. IBM 726 Magnetic Tape Drive

12.7 lbs. IBM TS1140 Tape Drive

Getting Sticky

Then

16 companies and organizations were using tape storage in 1952[2]

Now

82% of all companies in North America are using tape storage systems[3]

Changing Roles

1952 Primary storage, mainframes

1962 Primary storage, mainframes

1972 Shared primary and secondary storage, mainframes

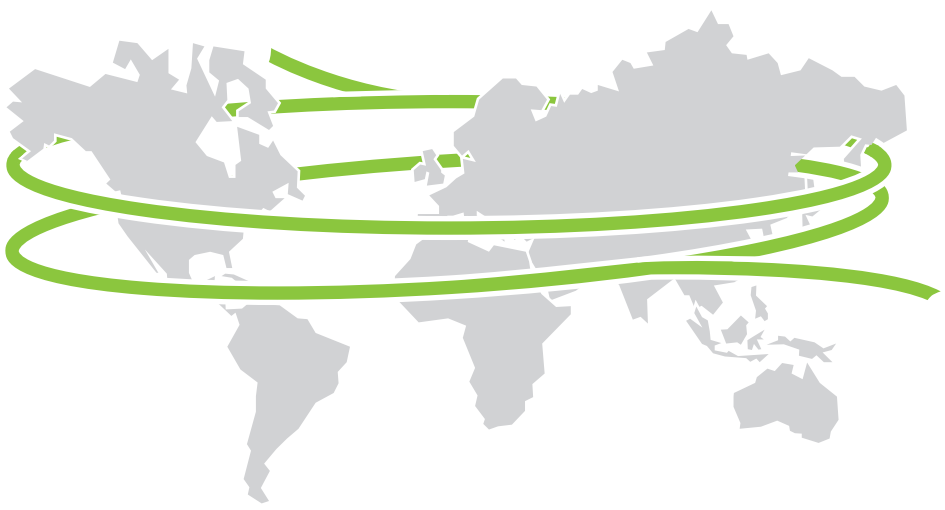
1982 Secondary storage, mainframes and minicomputers

1992 Secondary storage, mainframes and networks

2002 Data center backup and archiving

2012 Data center backup and archiving, secondary storage for Big Data

Check it Out



More than

400 Exabytes

of data reside in tape storage systems today[4]

=

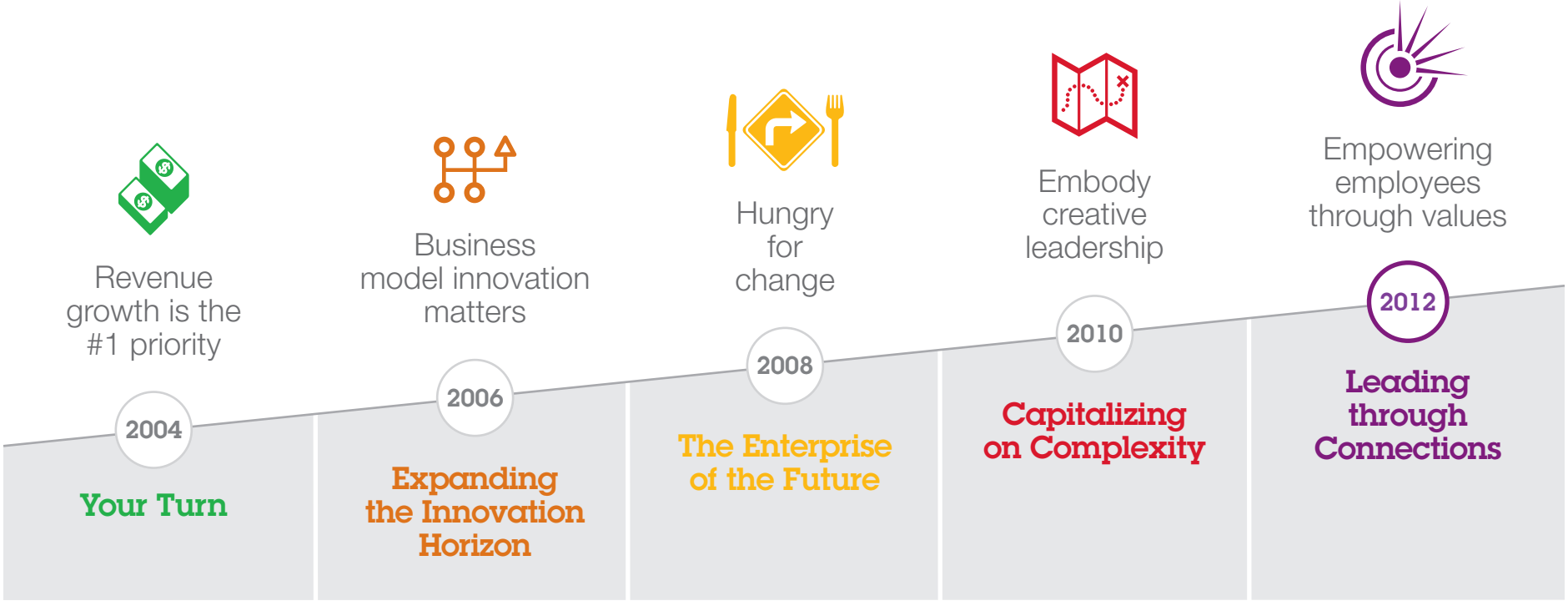
20 million Libraries of Congress[5]

[1, 2] IBM
[3] Enterprise Strategy Group
[4] Coughlin Associates
[5] Human Productivity Lab

IBM

The Global CEO Study 2012

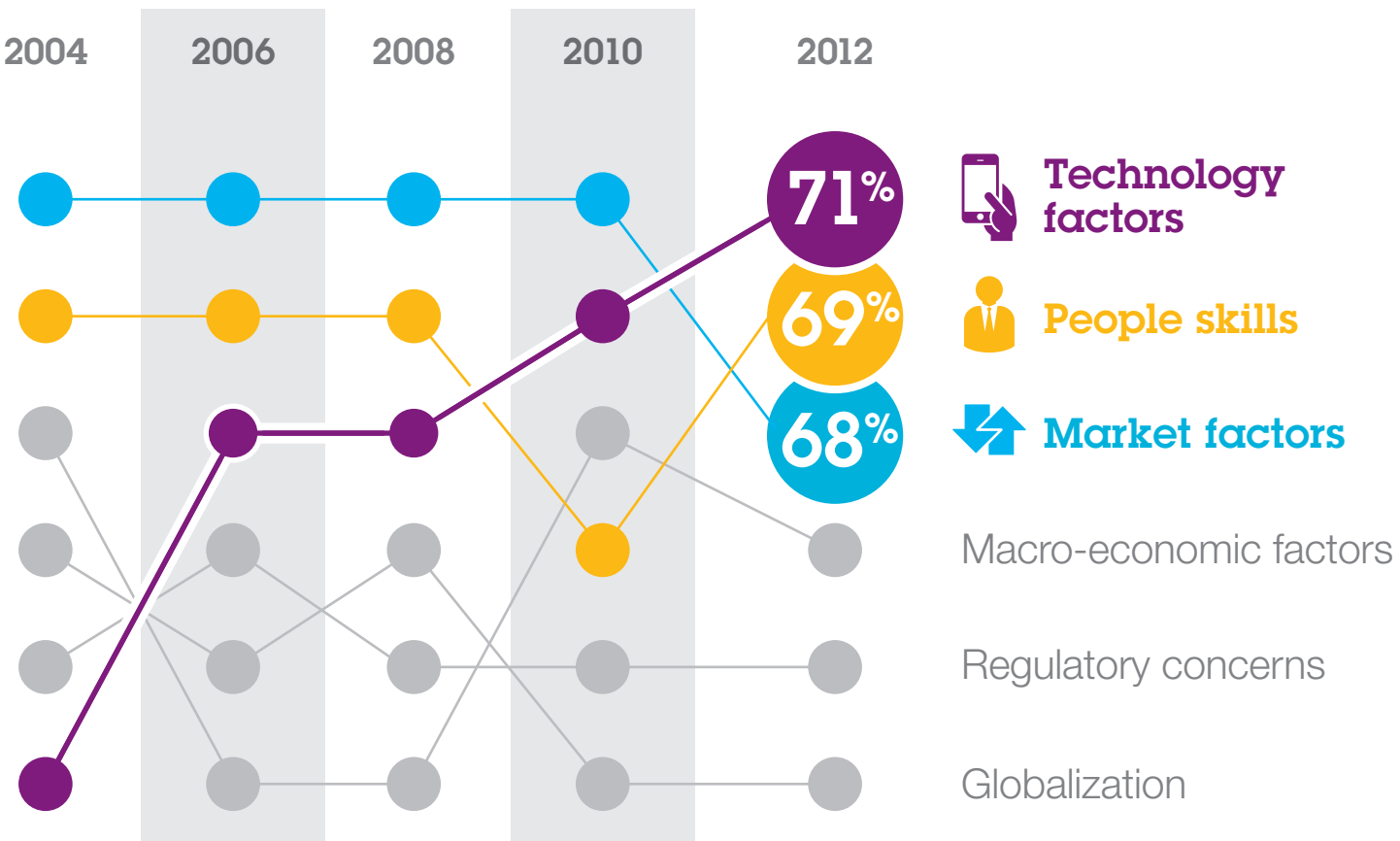
Building on insights and findings over the last eight years



IBM

CEOs rank technology #1

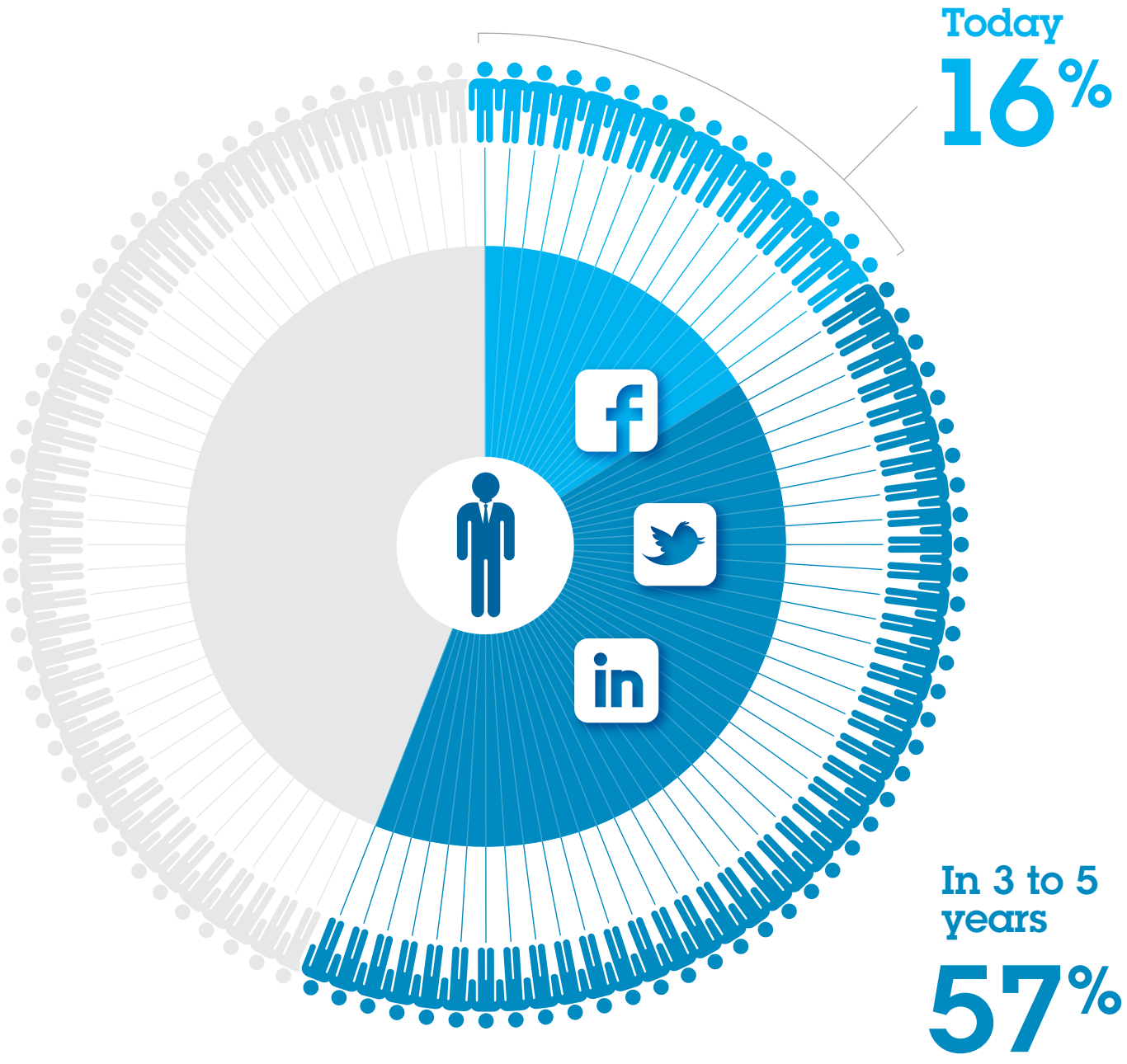
CEOs rank technology, people skills and market factors as the most important external forces to impact their organizations in the next 3 to 5 years.



IBM

CEOs get social

Percentage of CEOs using social media as a tool to connect with customers



Only 16 percent of CEOs are using social media platforms to connect with customers, but that number is poised to spike to 57 percent within the next three to five years.

IBM

Sunnier sentiment on Memorial Day travel

The **IBM Social Sentiment Index** shows a

46%

increase in social chatter about Memorial Day travel compared to 2011.

Sentiment on **shopping** is

6.5x

more positive than negative.

References to **flying jumped**

65%

References to **driving increased**

13%

Sentiment on **gas prices** is

5x

more positive than negative.

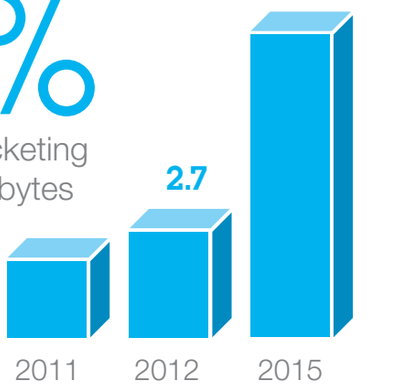
IBM

Smarter Storage for Big Data

The **amount of information** stored digitally around the globe has grown to 2.7 zettabytes in 2012, up

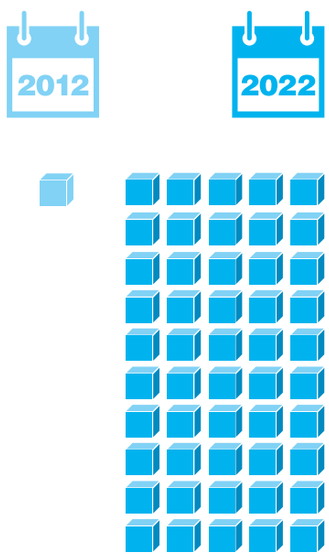
48%

from 2011, rocketing toward 8 zettabytes by 2015.[1]



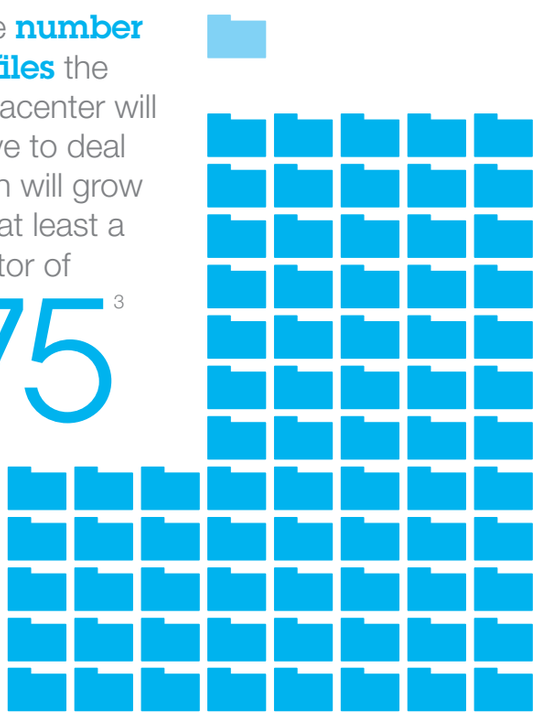
The **amount of information** managed by enterprise datacenters will grow by a factor of

50[2]



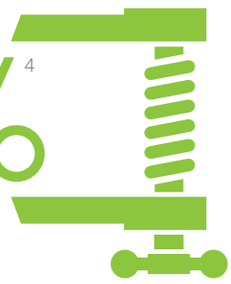
The **number of files** the datacenter will have to deal with will grow by at least a factor of

75[3]



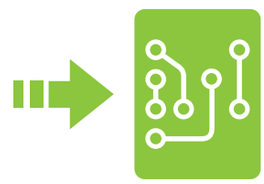
Real-time compression reduces space requirements up to

80%[4]



Migrating 3% of your **storage to SSDs**, will result in

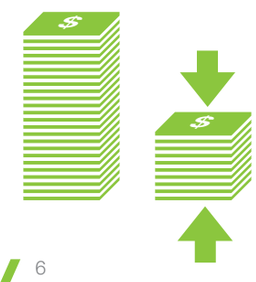
3x



overall storage system performance gains.[5]

Compared to uncompressed storage, IBM estimates real-time compression can **reduce cost** per TB up to

40%[6]



IBM Easy Tier can boost storage **performance** by up to

300%[7]

[1] IDC Predictions 2012, Competing for 2020
[2, 3] IDC Extracting Value from Chaos, June 1, 2011
[4, 5, 6, 7] IBM

IBM

A smarter planet is a sustainable planet

Over
80 percent
of items buried in landfills could be **recycled instead**.[1]

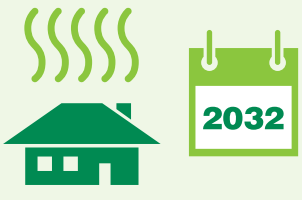
Recycling a single run of the Sunday New York Times saves
75,000 trees.[2]

The average family in North America, Europe, and Australia throws away more than
one ton
of garbage each year.[3]

14 billion
pounds of garbage, mostly plastic, is **dumped into the ocean** every year.[4]

Compost use has been proven to **reduce water consumption** by
30-50%
because as organic matter (OM) content of soil goes up, water use goes down.[5]

The average office employee **throws away**
360 pounds
of recyclable paper each year.[6]



The amount of wood and paper we throw away each year is **enough to heat**
50 million
homes for 20 years.[7]

For more information on how to build a smarter, sustainable, greener planet, visit ibm.com/smarterplanet/sustainability

[1] Jakab, Cheryl. 2007. Global Issues: Clean Air and Water. North Mankato, MN: Smart Apple Media.
[2] Waste Management Inc.
[3] Wehr, Kevin. 2011. Green Culture: An A-to-Z Guide. Thousand Oaks, CA: Sage.
[4] Orme, Helen. 2008. Earth in Danger: Pollution. New York, NY: Bearport Publishing.
[5] McGill Compost
[6] Wehr, Kevin. 2011. Green Culture: An A-to-Z Guide. Thousand Oaks, CA: Sage.
[7] EPA

IBM

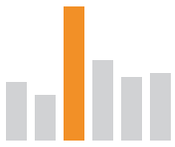
Technical computing

Technical computing can help commercial industries such as manufacturing, oil and gas and the life sciences with strategic tasks including product design and analytics, but many companies are not tapping its potential.

Over

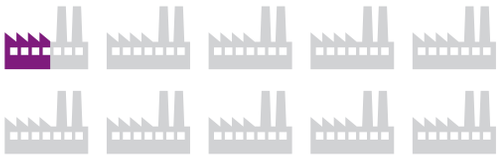
70%

of members of the National Center for Manufacturing Sciences (NCMS) believe increased adoption of advanced computing would lead to **competitive advantages**.[1]



Only **6%**

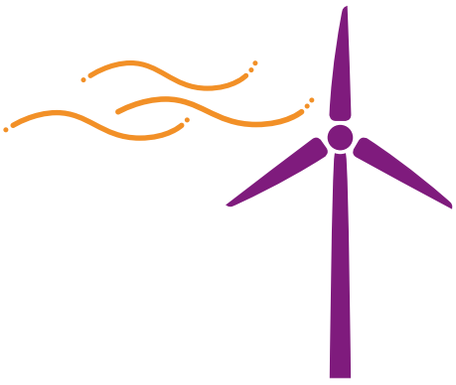
of the estimated 300,000 manufacturers in the US are fully taking advantage of **technical computing** today.[2]



Technical computing achievments

The Boeing Company aims to use simulations to redesign the vertical tail of a commercial jet, potentially saving

$300 million in fuel costs annually.



Using IBM technical computing, **Vestas Wind Systems** reduced their wind turbine placement analysis from weeks to less than **one hour.**

Red Bull Racing used IBM technical computing software to simulate new car designs and achieved a

20% increase

in performance and throughput, coming up with a design that reduces their cars' drag on the track.

[1] InterSect 360
[2] Digital Manufacturing Report

IBM

IBM's Smarter Computing Journey

IBM, like other businesses around the world, has had to manage the exponential growth of big data and the IT inefficiencies that it can cause. IBM's data is growing by more than 25% each year, on top of 110 petabytes of existing data. This led to application and server sprawl on a massive scale; at one point IBM had more than 150 data centers and approximately 15,000 applications running on nearly 15,000 servers.

Today, IBM is fueling its continuous transformation through a Smarter Computing journey. Here's how:

Unlocking the value of data

Increased **storage utilization** for up to

90%

capacity

Private cloud federates information from nearly

100

different information sources

Providing **analytics** on more than

1 petabyte of data

Improving data center efficiency

74,000 square-feet of floor space consolidation saved

30,000

megawatt-hours of energy—enough to power 3,000 homes for a year

Software licenses **reduced**

93%

6,500+

servers **consolidated** to best-fit technolgy

Simplifying the IT experience

50%

reduction in IT configuration, operations, management, and monitoring **labor costs** with the deployment of cloud technology

Server provisioning reduced from 5 days to

1 hour

Reduced end user **IT support** costs by up to

40%

25%

reduction in **internal IT spending**

Smarter Computing is driving IBM's ability to innovate and continually transform. By unlocking the value of big data, improving data center efficiency and simplifying the IT experience, IBM has become a more streamlined enterprise that is better able to meet client needs and grow its business.

Personalizing the in-store shopping experience

Call it unfair: today's in-store shoppers are deprived of personalized information, helpful product reviews, and special promotions that online shoppers enjoy in abundance. That's about to change with a new augmented reality mobility shopping app, developed by IBM Research.

The market opportunity

92%

of retail volume still takes place in the **brick and mortar store**.[1]

Gartner predicts that

1 billion

smartphones will be sold in 2014.

The in-store opportunity

Consumers are more likely to shop in stores than to buy using a mobile phone, but once in the store, consumers want in-store services available through their mobile devices.

58%

of consumers want to get **product information** in-store.[2]

42%

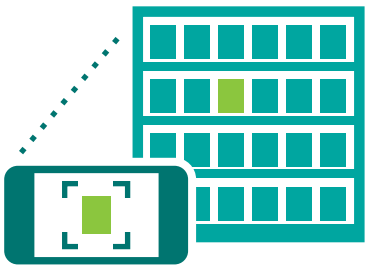
of consumers are more likely to **return to stores** that have in-store mobile promotions.[3]

19%

of U.S. consumers browse their **mobile devices** while shopping in-store.[4]

How the augmented reality mobility shopping app works

Customer creates own one-time profile of dietary and environmental **preferences**.



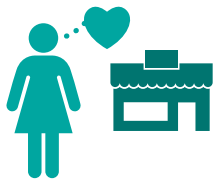
Point mobile phone's video camera at shelf items. Products are **recognized** when compared to images in a database.

The application returns **ranking** based on customer's preferences and also offers promotions and coupons.

What shoppers and retailers can expect

Delivers **targeted** messages and offers.

Improves **response rates** by detecting when a customer is ready to act.



Improves **customer loyalty** through tailored and personalized experiences.

[1] Forrester Research
[2] Sterling Commerce
[3, 4] hybris

IBM

Cycle Chic®

Will need some help in crafting this opening paragraph to set the stage. Lorem ipsum dolor sit amet, a consectetur adipscing elit, sed diam nonnumy eiusmod tiempor incidunt ut labore et dolore magna aliquam erat avolupat. Ut enim ad minimirn veniami quis nostrud exercitation uliamcorpor suscipit laboris nisi ut aliquip ex ea commodo consequat. Duis aut nnumy eiusmod tiempor incidunt uem veluem irure dolor in reprehenderit.

2007

Copenhagen
Berlin

Unique posts

Creation of cycling chic blog in **Copenhagen**

2008

Stockholm
Portland
Los Angeles

228 % of unique posts relative to 2007

The *Cycle Chic Manifesto* published in **Copenhagen**

Dashing Tweeds company is created in **Britain**

Outlier company is created in **New York**

Stilrad reinvents the bicycle shopping experience in **Munich**

2009

Amsterdam
Dublin
London
Atlanta
New York
Ghent
Boulder
Seoul
Charleston
Phoenix
Posnan
Dallas

479 %

Po Campo created in **Chicago** offering stylish bicycle bags and accessories.

Bicycle fashion show premiers in **New York**

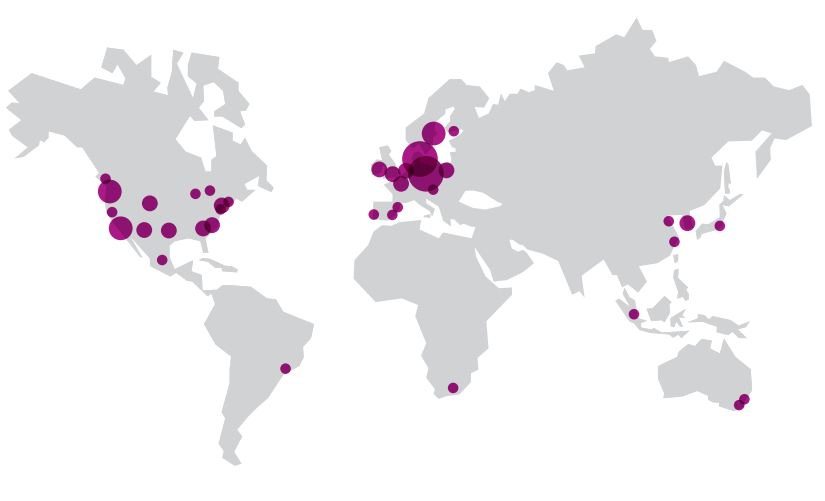
Special insurance coverage is introduced

Top Shop fashion in **UK**

First Tweek Run in **somewhere**

2010

Chicago
Barcelona
Sydney
Valencia
Noho
Vancouver
Lisbon
Helsinki
Beijing
Sacramento
Vienna
Toronto
Rio de Janeiro
Canberra
Johannesburg
Boston
Tokyo
Singapore
Shanghai
Mexico City

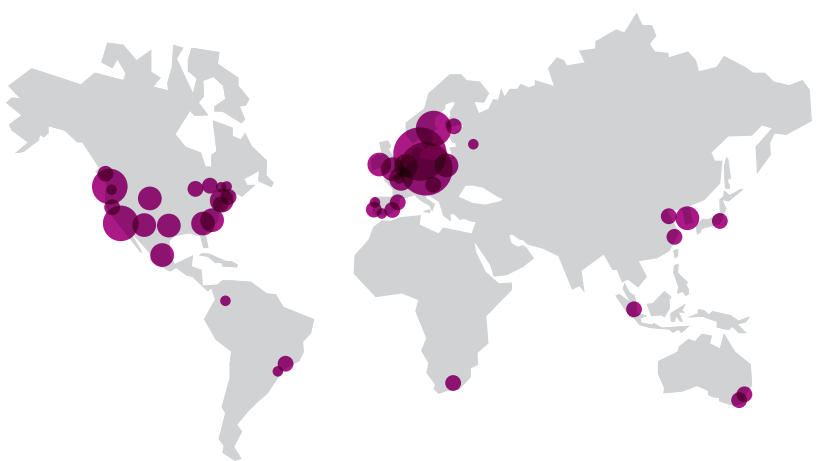


1312 %

Major **New York** newspaper headline “Bicycle chic gains speed” appears

2011

Montreal
Bogota
Moscow
Oporto
Ottawa
Paris
Sao Paulo
Seville
Seattle



Philosophy Bag Company in **Seattle** promotes bags that are “Made in America” with style

Stylish urban cyclist shoes are introduced by Kursk in **Somewhere**

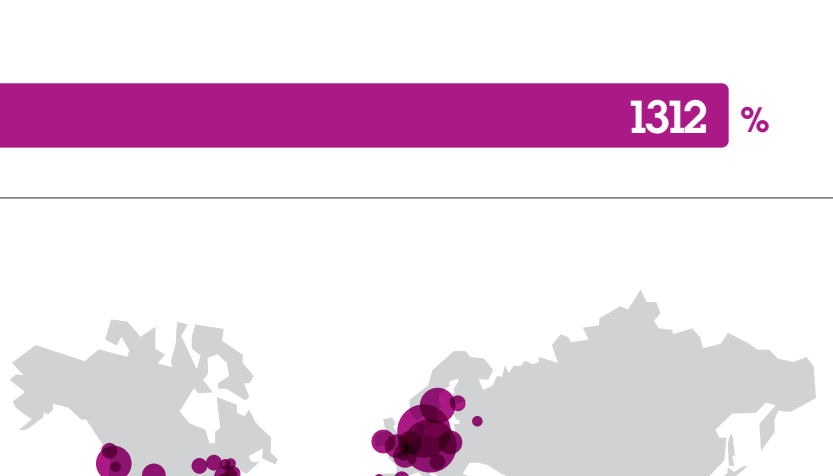
Ralph Lauren’s *Rugby Collection* based around The Tweed Run is introduced

Target® begins selling new *Missoni for Target* bicycle

2086 %

2012

Tallinn



Photography explosion of fashion on bicycles

Levi’s creates *Commuter Series* jeans

Gucci introduces the *Bianchi*

London fashion week features bicycles and high fashion

635 Unique posts since May

IBM

BC Egg Board improves quality and safety of eggs using analytics

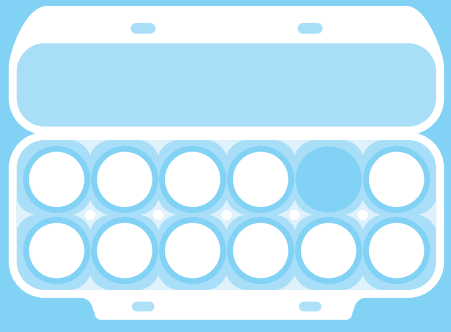
There are more than

130

egg producers across the province of British Columbia.

And they oversee

2.7 million chickens.

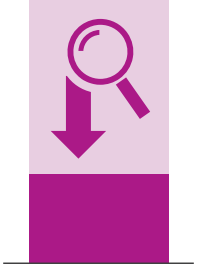


66 million eggs are consumed in British Columbia each year.

Real-time production data from all farms is collected electronically. Egg safety data is collected by on-site inspectors using tablets.

This has reduced farm inspection workload by

66%



And created an annual cost savings of

$100,000

Source: British Columbia Egg Marketing Board

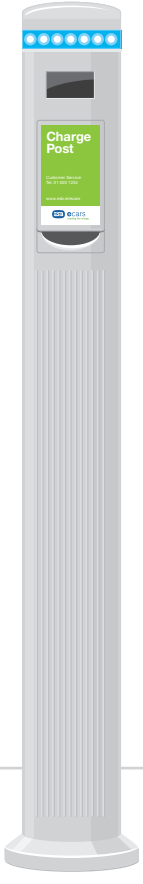
IBM

Intelligent and flexible charging for Ireland's electric vehicles

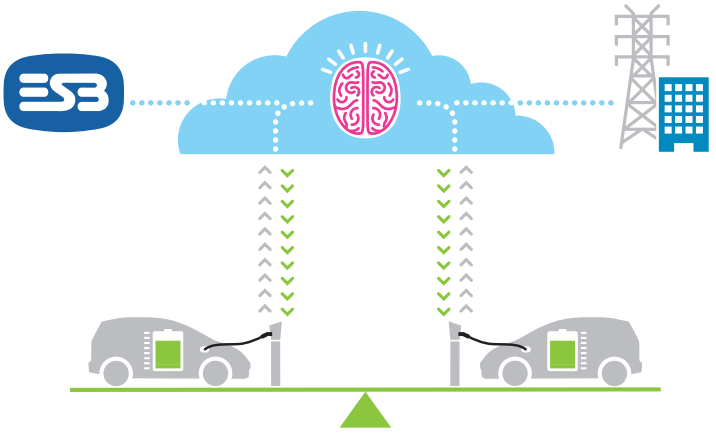
IBM's Electric Vehicle Enablement Platform will connect

1000

public charge posts across Ireland.



The platform will connect ESB eCars with the energy retailers and the charge posts, allowing all three to communicate energy usage and financial data directly.



Drivers will be able to use mobile devices to locate the nearest charge post, check its availability and make a reservation.

Users can pay using an identification card and have the amount appear on the monthly bill from their regular energy provider. This smart charging capability allows consumers to charge anywhere at anytime, regardless of their utility provider.

IBM

Everyday supercomputing

Exploiting Big Data will require supercomputers working throughout modern networks. Such "industrial-strength" technology is beginning to be refined for everyday use; to tackle a wider array of critical chores in more industries than ever. An early pilot has researchers in the US and Taiwan looking to boost a promising new cancer treatment by applying a healthy dose of supercomputer processing.

Proton-beam therapy today

A promising radiation treatment for deep cancers such as pancreatic and brain. But calculating the specific timing, focus and duration of the radioactive beam takes time and is a challenge for even the best doctors.

Doctors and technicians take **CT scans** to visualize the tumor.

It takes doctors **a week or more** to analyze CT scans, calculate treatment variables and calibrate the machine.

During that time, **bodily conditions can change**, potentially limiting the effectiveness of the chosen radiation treatment.

Proton-beam therapy with supercomputer technology

Uses supercomputer technology to process the Big Data sets used in radiation treatment to quickly determine the right course of treatment for specific tumors.

The patient is wheeled directly from CT to beam-therapy machine. Diagnosing the patient, calculating treatment variables and calibrating the machine can be done in **15 minutes,** instead of one week.

With real-time supercomputing, the machine will be able to generate up to

5 million

specific treatment options instead of the 100 generally available today.

IBM

Serving insights to US Open tennis fans

For 22 years, IBM and the USTA have created an interactive digital environment that connects tennis fans to action at the US Open and delivers insight into what's happening on the courts.

1990

IBM becomes the **Official Information Technology Provider** of the US Open

1995

IBM hosts the first official tournament website, **USOpen.org**

2001

IBM and the USTA use **Linux** to manage US Open.org traffic

2005

Virtual court experience allows fans to follow US Open action in real time

2006

Virtualization and self-managing autonomic **technologies** support the US Open green initiative

2007

SlamTracker technology provides a live interactive view and enhanced point by point scoring

2009

US Open goes mobile with official iPhone app and offers live-streaming match footage

2010

Tablet-friendly version of USOpen.org is introduced for mobile tennis fans

2011

Keys to the Match analyzes 39 million data points to reveal insights that indicate how players need to perform to win and a new **US Open Android app connects fans to tournament action**

2012

IBM and USTA unveil a US Open iPad App that delivers **live video, real-time stats and insight into match data** via a social dashboard

IBM

Do the math

How a science, technology, engineering & math (STEM) education is a formula for success

US students aren't engaged in STEM. + **Students aren't staying in school.** = **We aren't good at math and science.**

In 2009, only **18%** of bachelor's degrees were STEM-related, **down from 24% in 1985.**[1]

75% of students in community college **don't graduate.**[2]

Students in the US rank only **18th** **in math** and 13th in science literacy.[3]

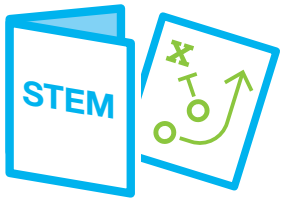
But STEM and post-secondary schooling can lead to success

STEM workers earn **30%** **more per hour** than non-STEM workers.[4]

14 million **new tech jobs** will be created from 2008–2018 for those with **associate's degrees.**[5]

Public/private partnerships can now provide improved STEM education for all students

IBM has published a **playbook to help cities** establish grades 9–14 schools that prepare students for STEM careers.



[1] US Congress Joint Economic Committee
[2] Center for an Urban Future
[3] Organization for Economic Cooperation and Development
[4] US Department of Commerce
[5] Georgetown Public Policy Institute

IBM

IBM System z mainframe goes global

Brazil, Russia, India, China, Turkey, South Africa and Mexico are the **fastest growing markets for computer equipment** —

14%

of the global IT market.[1]

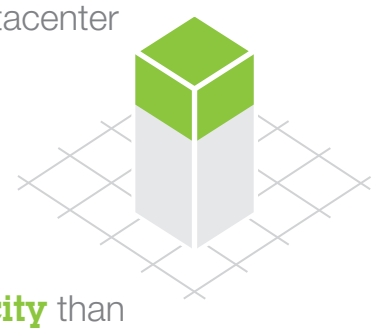
In 2Q 2012, System z **business in the growth markets** was up

11%

per IBM earnings.

IBM's new zEnterprise EC12 System announced August 28, 2012, has been built with features that will appeal to clients in growth markets, such as the capability to run without a raised datacenter floor and to provide

50%



more systems capacity than previous generations without increasing energy usage.

Over the last four years, European central **governments have grown their workloads on System z** by over

25%

System z in action

The System z mainframe is being used by the Cameroon Ministry of Finance to help modernize the payroll processes for government employees in the country and is expected to provide the Ministry of Cameroon with a **200% increase in performance** while **reducing operating costs by 30%.**

▲ 200%

▼ 30%

Comepay, a leading provider of self-service payment kiosks in Russia and the Commonwealth of Independent States, selected the IBM mainframe to support its business expansion strategy across the country and help it to manage a predicted three-fold **increase in transactions** from 10,000 to 30,000 per second.

▲ 300%

[1] Global Tech Market Outlook For 2012 to 2013, Forrester Research, Inc., January 6, 2012

IBM

Big Data in Healthcare: Tapping New Insight to Save Lives

Healthcare is challenged by large amounts of data in motion that is diverse, unstructured and growing exponentially. Data constantly streams in through interconnected sensors, monitors and instruments in real-time faster than a physician or nurse can keep up.

16,000
hospitals worldwide **collect data** on patients

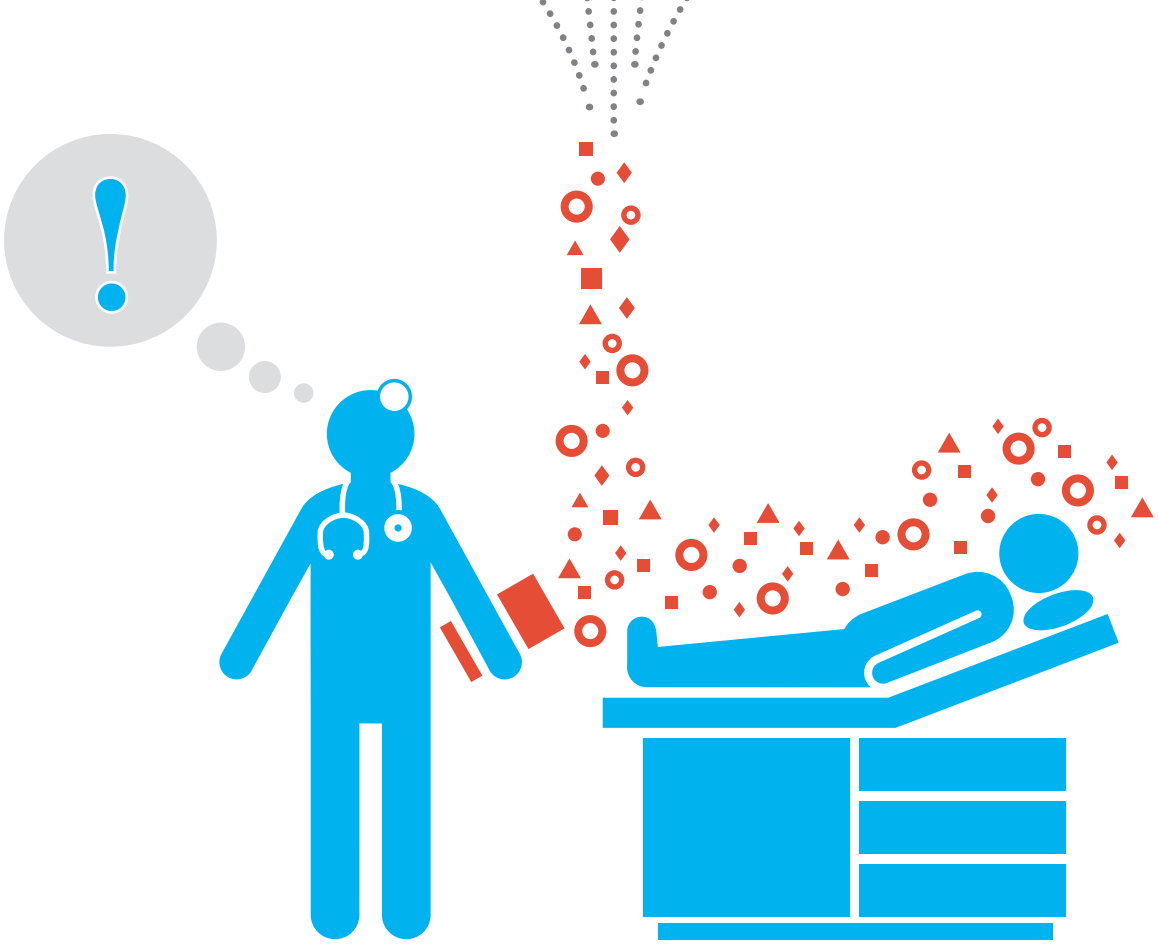
4.9 million
patients worldwide will use **remote monitoring** devices by 2016[1]

An **18%**
annual compound growth rate is anticipated between 2010 and 2016 for patients that will use **remote monitoring devices**[2]

80%
of health data is unstructured and stored in hundreds of forms such as lab results, images, and medical transcripts

Patient monitoring equipment pumps out an average of

1,000
readings per second or 86,400 readings in a day



As the volume and velocity of health data increases, new technologies such as **Stream Computing** that analyzes health information in real-time and **big data analytics** that can predict the on-set of illness can be used to help caregivers make better decisions.

[1, 2] Berg Research

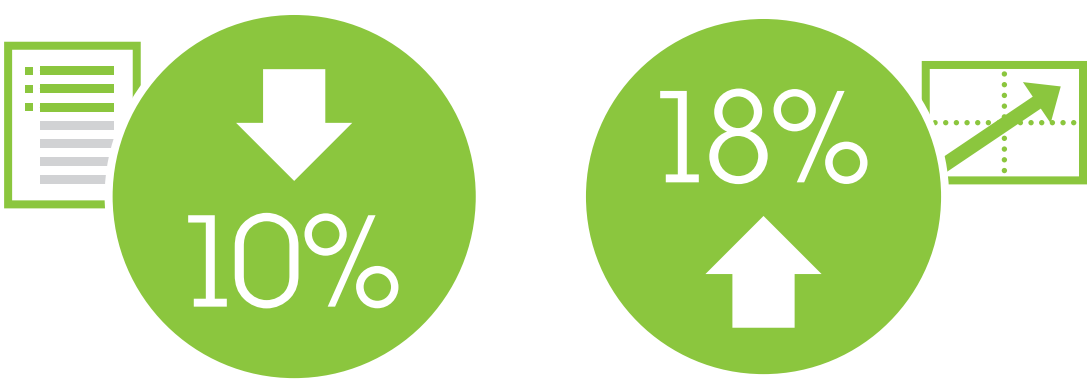
IBM

Revealing law enforcement's real ROI

The nature of crime is evolving and resources are tight

Newer, smarter approaches are needed for law enforcement. These can be easy to deploy and are often about **making better use of existing capabilities** rather than implementing complex new systems.

Quantifying an intelligent approach to law enforcement



Reducing crime

Improving efficiency and effectiveness

Delivering increased benefits to 3 major stakeholder groups

Citizens

+4%

- Greater security and well being
- Increased availability for work
- Faster response time
- Decreased victim impact
- Increased housing wealth

Police Department

+18%

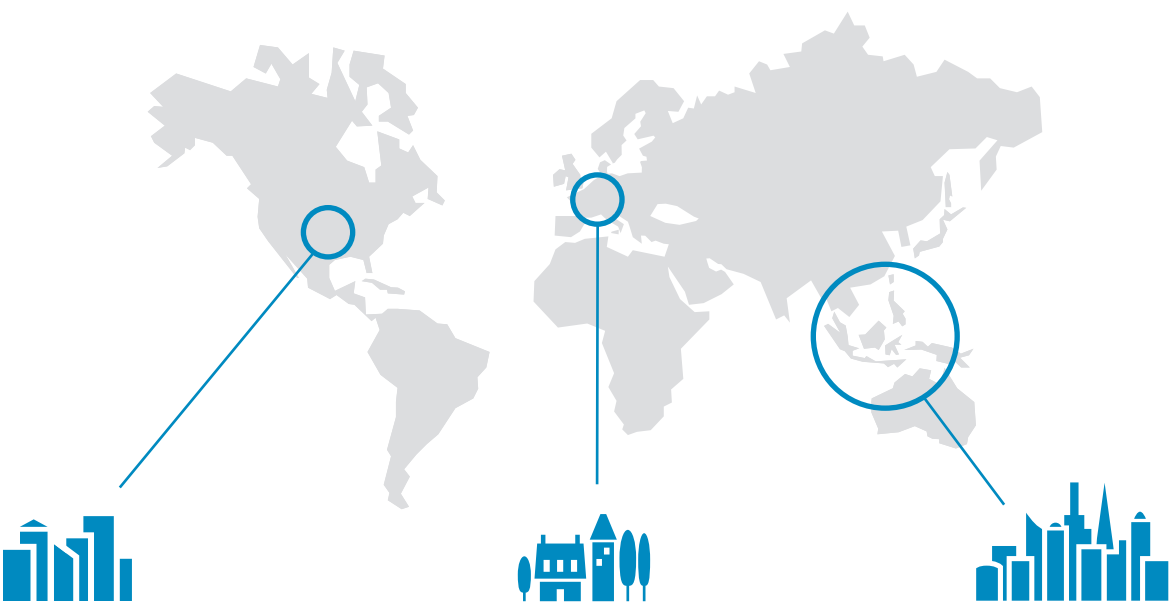
- Increased staff productivity
- Increased officer safety
- Reduced administration costs
- Improved staff retention
- More effective resource allocation

The city and other government agencies

+4%

- Reduced legal/prosecution costs
- Reduced corrections costs
- Increased tax receipts
- Increased economic activity
- Improved image and reputation

Translating into financial returns for cities of all sizes



Medium city, USA

$200

million per annum

- **18%** police department cost savings
- **$135 million** citizen/city benefits
- 5 year ROI **500%**

Rural county/province, Europe

$90

million per annum

- **17%** police department cost savings
- **$60 million** citizen/county benefits
- 5 year ROI **300%**

Large city, Indonesia

$68

million per annum

- **17%** police department cost savings
- **$20 million** citizen/city benefits
- 5 year ROI **575%**

Learn more about the benefits smarter public safety can bring including an estimate of benefits for your organization at **ibm.com/smarter/government/publicsafety/value**

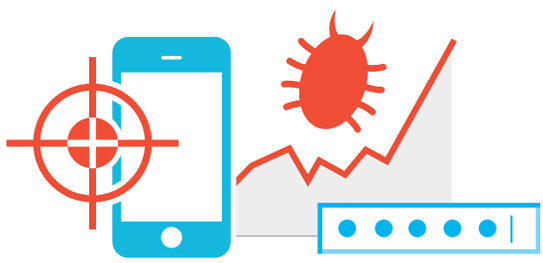
The value of smarter public safety, IBM Center for Applied Insights, 2012.

IBM

IBM report shows rising attacks on browsers and social media

IBM threat analysts see an increase in malicious web activities

The **IBM X-Force 2012 Mid-Year Trend and Risk Report** shows a sharp increase in browser-related exploits, renewed concerns about social media password security, and continued disparity in mobile devices and corporate "bring your own device" programs.



New security operations center to help clients stay ahead of threats

To help clients combat a constantly evolving threat landscape and proactively manage these threats, IBM is adding a new security operations center (SOC) in **Wroclaw, Poland**, as part of an extended global network.

SOC locations

Atlanta
Bangalore
Brisbane
Brussels
Denver
Detroit
Hortolandia
Tokyo
Toronto
Wroclaw

IBM X-Force 2012 Mid-Year Trend and Risk Report results

So far in 2012, IBM reports over

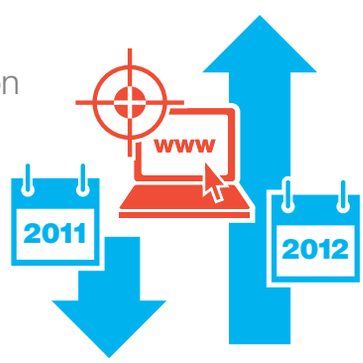
4,400

new security **vulnerabilities**.

Web application vulnerabilities **decreased**

8%

last year.



But there has been a **resurgence** in 2012, with over

2,000

reported to date.

IBM

The Smarter Energy Research Institute: Creating the utility of the future

The National Academy of Engineering called electrification "the greatest engineering achievement of the 20th century."[1] Today, the widespread consensus is that electrification and energy need to get smarter to meet the needs of the 21st century.

What keeps energy and utilities team leaders awake at night?

Aging infrastructure that needs better reliability: India blackout—

600 million people without power across two days.

Safe integration of distributed energy resources: **Electric vehicles** will represent up to

33% of total global sales by 2020.[2]

A flood of data: Smart grid technological innovations will unleash a

900% **increase** in the quantity of data that utilities will need to communicate, manage and analyze over the next decade.[3]

Demand for and compliance with **distributed energy resources**: The European Union wants

20% of their member countries' electricity to come from renewable sources by 2020.[4]

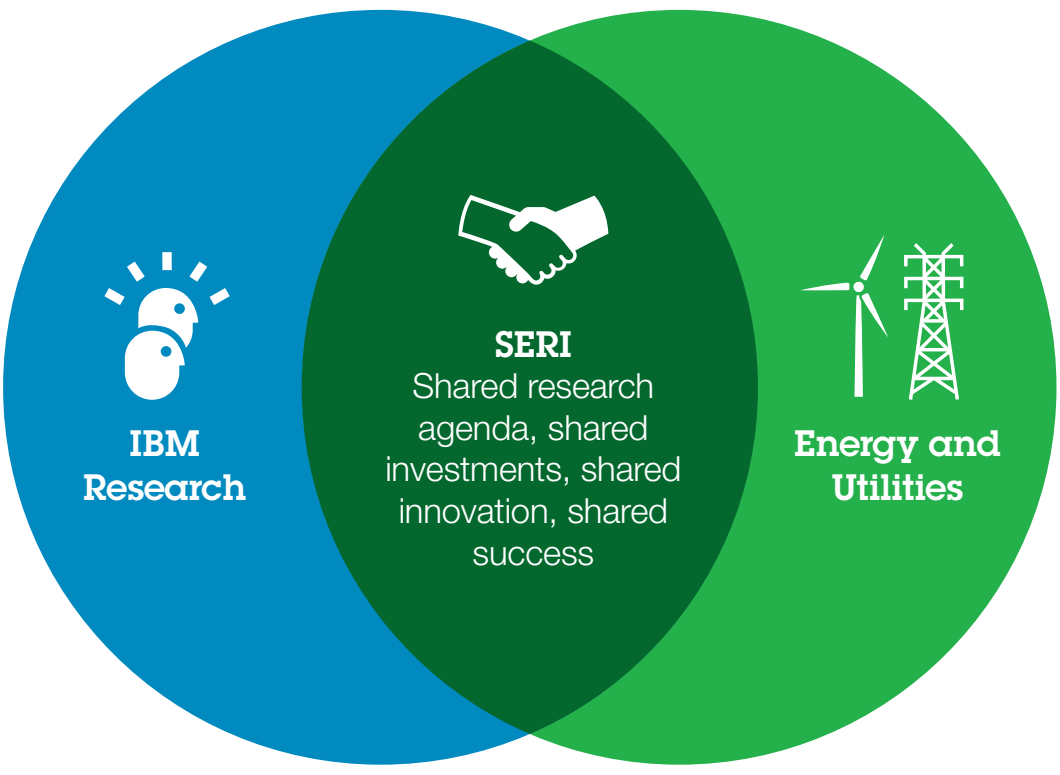
Cost of modernizing the grid:

$100 billion in the US[5]

Loss of revenue due to outages:

$152 million per year[6]

The Smarter Energy Research Institute (SERI) is transforming the energy and utilities industry with predictive analytics, optimization and advanced computing.



Where SERI will focus

Outage planning optimization—reducing the amount of time a customer is without power

Asset management optimization—improving the allocation of capital and operational expenses in upgrades and maintenance

Wide-area situational awareness—detecting anomalies in the grid to improve resiliency, reliability and energy quality

Integration of renewable and distributed energy resources—meeting renewable integration and distributed energy resource regulatory targets while ensuring system stability

Participatory network—using an engagement model to transform relationships with consumers

[1] greatachievements.org
[2] Deloitte
[3] Lux Research
[4] European Commission
[5] Energy Secretary, Steven Chu
[6] GIS Smart Grid

IBM

Crush the competition and produce results with business analytics

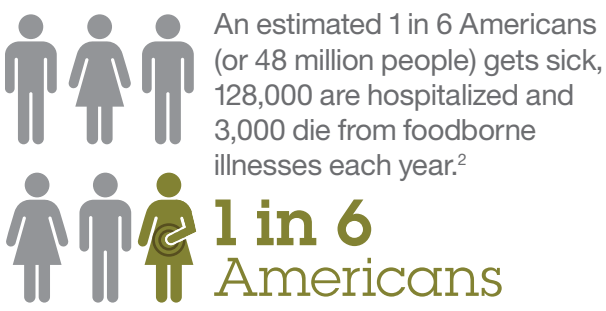
From winemakers who crush grapes into vintage blends to farms that provide fresh produce for school lunches, food and beverage companies are using technology to guarantee that their products will reach consumers' tables without affecting supply, safety or environmental sustainability. How? With up-to-date data on such vital factors as food contamination risks, water and energy usage and global supply shifts provided by Business Analytics.

Challenges:

1 – Supply

Consumer product firms and retailers lose an estimated $40 billion annually, or 3.5% of their sales, from supply chain inefficiencies.[1]

2 – Safety



3 – Sustainability

It takes roughly 10% of the total US energy budget, 50% of US land and 80% of US freshwater sources to get food from farms to forks. Yet, 40% of food in the US today goes uneaten.[3]

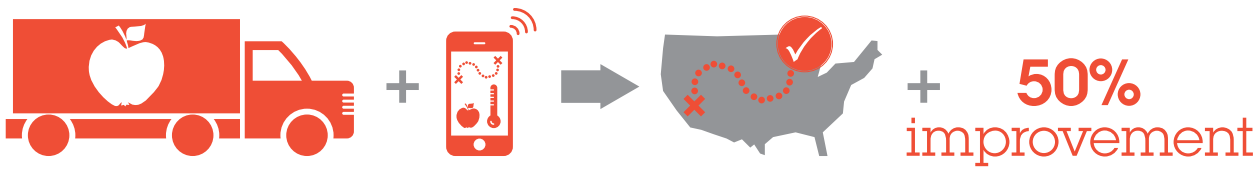
Client Stories:

1 – Supply

A leading winery had no access to up-to-date data from its vineyards, and specific growing and harvest seasons created only a brief window for addressing supply issues that could threaten profits. Using IBM analytics, this business reduced its report-generating time by 90%. Also, a more complete view of vineyard and sales data provides a better understanding of when to adjust supply.

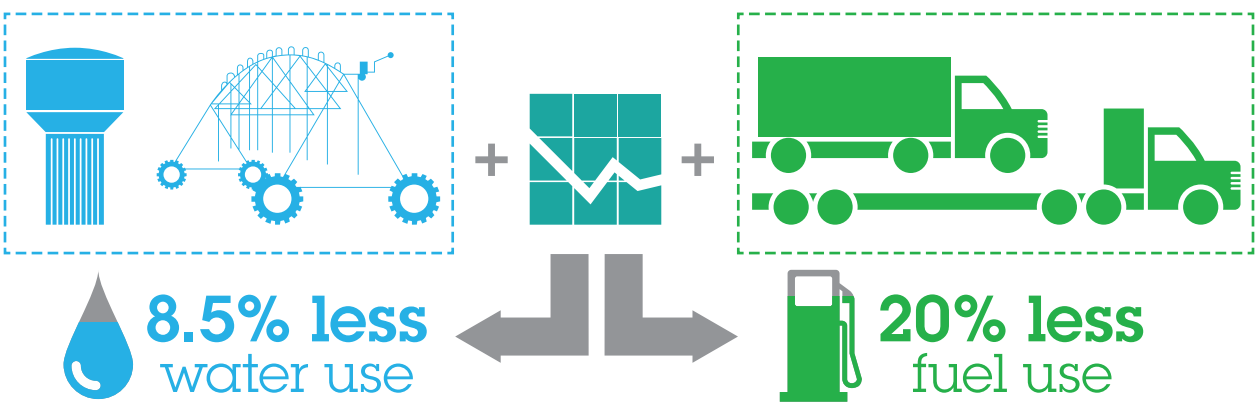
2 – Safety

With help from IBM, a major cooperative of US produce growers uses mobile devices for recording food safety compliance data. With analytics, they can better track food items and monitor key control points such as refrigeration temperatures and have improved productivity by 50%.



3 – Sustainability

Using IBM platforms to carefully measure water usage and by applying a variety of irrigation techniques, a produce grower and seller experienced a decline in water use per unit of 8.5% over 4 years. In addition, the company used analytics to decrease its fuel use by 20% by measuring equipment usage and matching the proper-sized equipment to the appropriate jobs.



[1] A.T. Kearney, Inc.
[2] Centers for Disease Control and Prevention
[3] Natural Resource Defense Council

SMB infographic title goes here lorem ipsum dolor sit amet

SMALL AND MEDIUM BUSINESS

Over the last two decades, small and new businesses have created

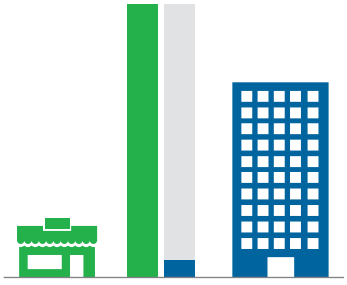
2 out of 3 **net new jobs**.

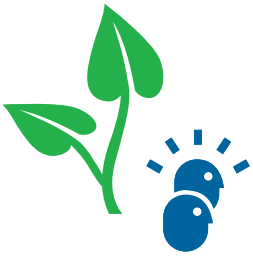
Today, the country's 28 million small firms employ 60 million Americans,

half of the **private sector workforce**.

Small innovative firms are

16x more productive than large innovative firms in terms of **patents per employee**.





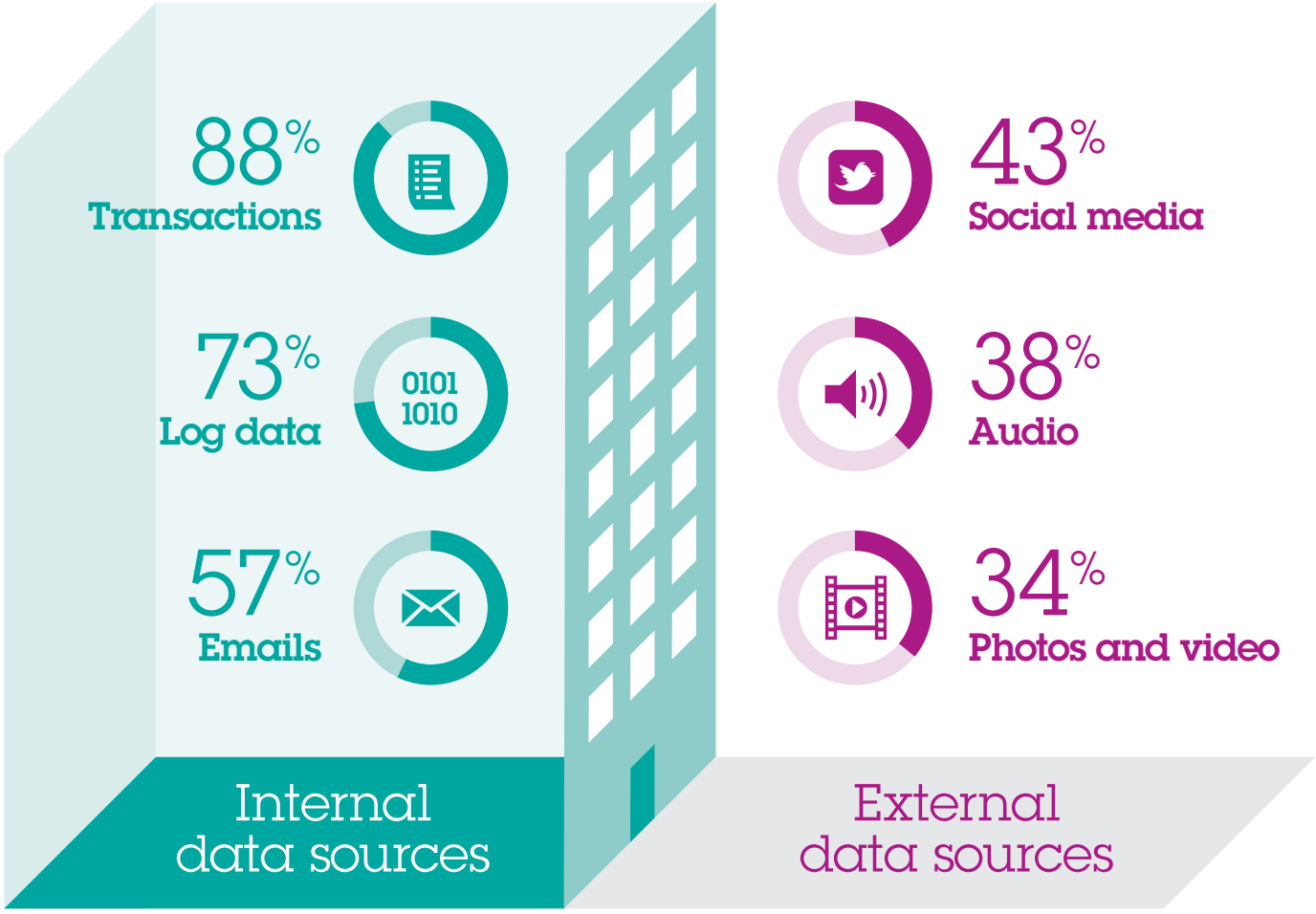
Green patents from small firms are cited

2.5x as frequently as green patents from large firms.

IBM

Where does big data come from?

Most big data efforts are currently focused on analyzing internal data to extract insights. Fewer organizations are looking at data outside their firewalls, such as social media.



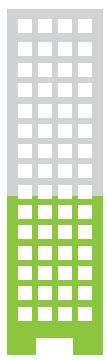
IBM

What is the state of social technologies in your organization?

IBM surveyed 1,160 business and IT professionals to understand the state of social business adoption to take a pulse on how organizations are tapping **the power of social technologies to advance business objectives.**

The value of social business is increasing within organizations.

46% of the companies surveyed **increased their social business investments** in 2012.



Companies that are emerging as social business leaders are applying the technologies to drive **customer-facing activities** such as lead generation, sales and post-sales service.

Despite the accelerated adoption of social technologies, **middle managers** who are being called on to implement these technologies are facing challenges.

2/3 of respondents are not sure they **sufficiently understand the impact** that social technologies would have on their organizations over the next three years.

There are different perspectives within management. Only 22 percent believe that middle managers are prepared to incorporate social technologies into their daily practices, while 48 percent of organizations indicate they have support from the C-Suite.

22% **Middle Managers**

48% **C-Suite**

For organizations to evolve into social enterprises, some basic groundwork must be laid.

Provide an infrastructure for **engagement** like setting up forums, teamrooms and collaborative spaces.

Integrated **social practices** into day-to-day work activities like using blog posts and activity streams to positively accentuate project management tasks.

Understand where and how **data generation** could benefit the enterprise.

Teach employees how to **collaborate effectively** with individuals outside of the organization's boundaries using social business methods and tools.

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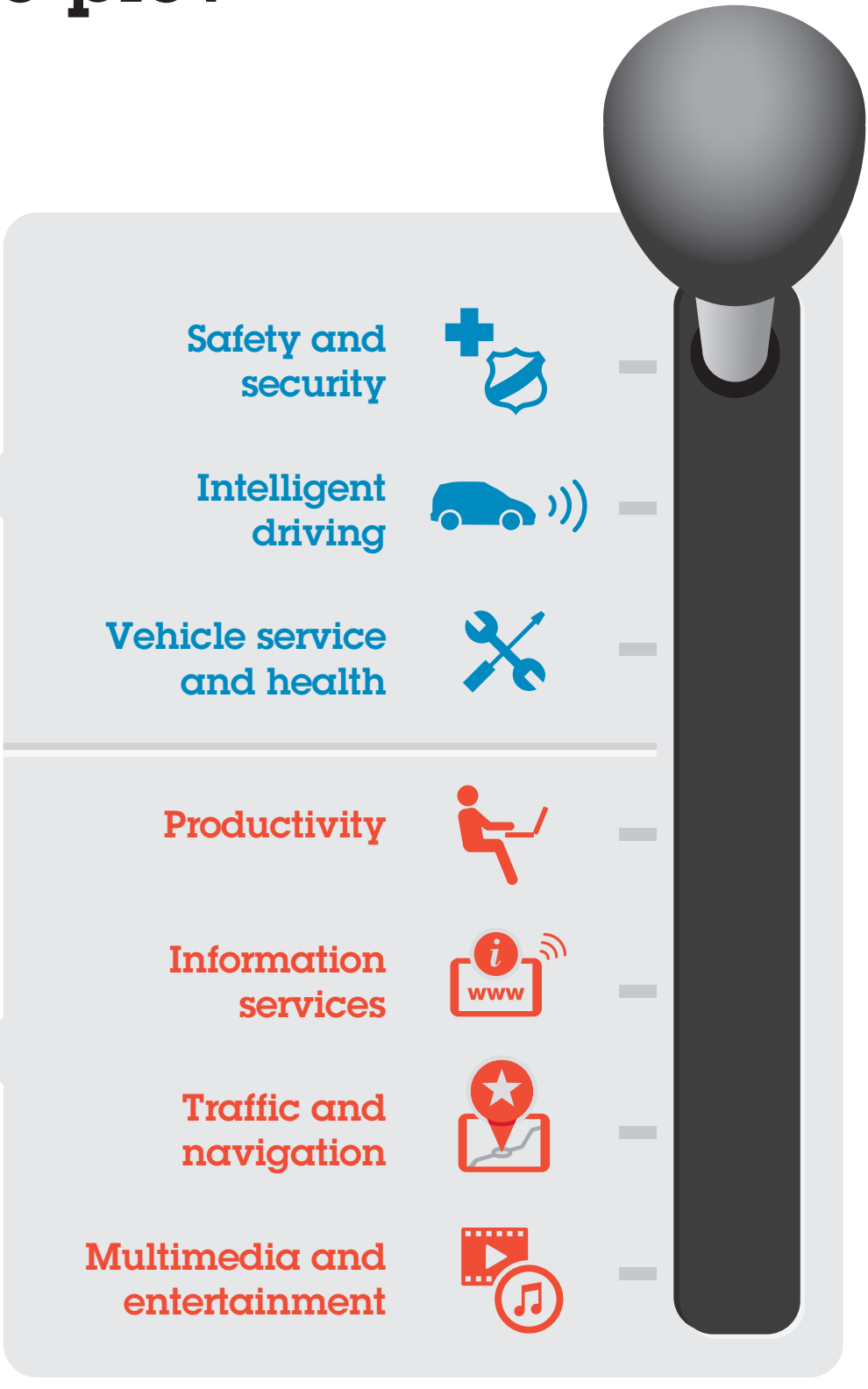
The spectrum of connected-car services: Who will get a bigger slice of the pie?



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