



## I D C C O U N T R Y B R I E F

# The Digital Universe in 2020: Big Data, Bigger Digital Shadows, and Biggest Growth in the Far East — Western Europe

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Sponsored by EMC Corporation

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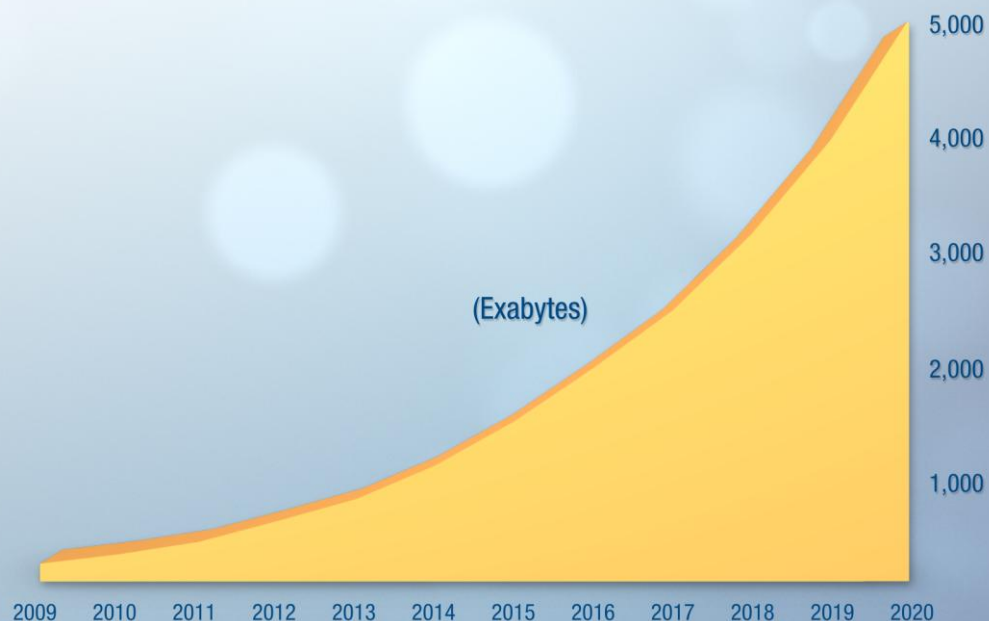
### Western Europe

#### **Digital Universe in Western Europe to Grow Tenfold Between Now (2012) and 2020**

The "digital universe" of Western Europe, or the digital bits captured, created, or consumed each year in the region, is expected to grow from 538 exabytes to 5.0 zettabytes between 2012 and 2020, more than 30% a year (see Figure 1). That means it will double about every two and a half years.

By 2020 the Western Europe digital universe, if printed out as text, would make a stack of books as high as 6.5 trillion Eiffel Towers. Or put differently: in 2020, the Western Europe digital universe, if carried on 1GB memory sticks, would equal to more than 12,000 sticks per person in Western Europe, up from about 1,000 sticks per person in 2012.

### The Digital Universe: Western Europe Growth



What's driving this growth?

- Continued growth of Internet usage, social networks, and smartphones among consumers
- The falling costs of the technology that creates, captures, manages, protects, and stores information
- Migration from analog TV to digital TV
- Growth of machine-to-machine communication, including security images
- Growth of information about information

For instance, Western Europe now has a PC installed for every person over 15, more than 65% of the population is online, and a third access the Internet from more than one device. In 2012 it had as many camera phones in use as people, and nearly 50 million tablets and ereaders. Its population and infrastructure meant it had more digital security camera footage than the U.S. or China, and it consumes more digital TVs than China and India combined, despite the fact that it has fewer TVs. And although the region has less than 6% of the world population, it accounts for a quarter of IT spending.

It's also worth noting that the Western European digital universe is growing faster than available storage. This is a function of an increasing amount of transient data — from phone call routing signals and digital TV signals watched but not stored to signals coming from the Large Hadron Collider at CERN that are discarded within microseconds. The issue with storage in the digital universe is less how to store all the bits as it is with the bits we do end up storing, how to do so intelligently, economically, and securely.

## **The Consumer Influence**

When we first started studying the digital universe, the origin of a majority of the bits within it came from the mature markets: in 2005 the U.S. and Western Europe alone accounted for 49% of the digital universe.

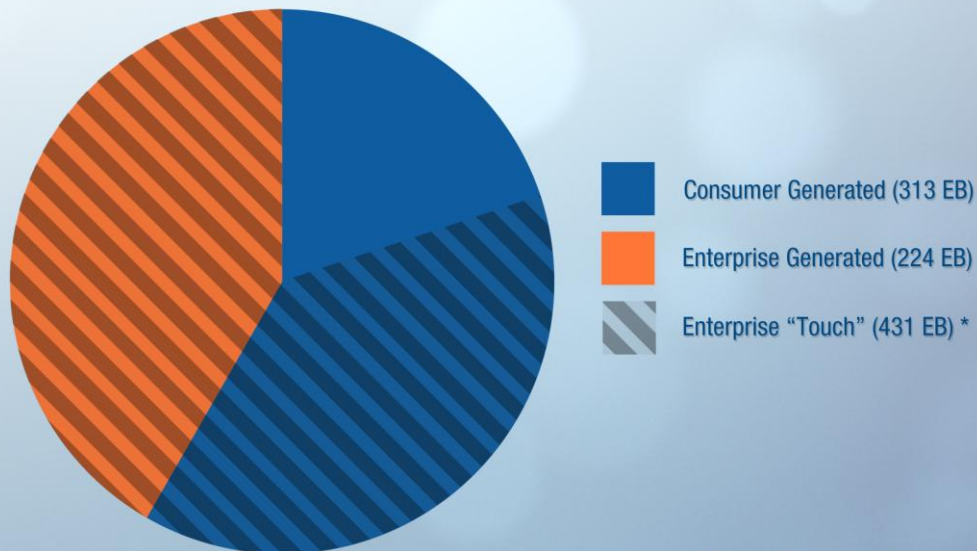
But as Moore's Law has made digital technology — computers, smartphones, cameras, TV, movies, industrial equipment — cheaper it has become affordable for more and more people around the world.

Over time the distribution of the bits within the digital universe by country of origin will more and more closely mirror the distribution of population. By 2020 the U.S. and Western Europe will generate only 30% of the bits in the digital universe. But in Western Europe the contribution of individuals, as consumers or workers, creates a paradox. While individuals accounted for 58% of the regional digital universe in 2012 and enterprises created 42% (see Figure 2), nevertheless enterprises had responsibility or liability for 80%.

Somewhere in a byte's life as it travels from one consumer camera phone to another it passes through an enterprise-owned network that must keep it secure and protect the privacy of the sender and receiver. The same with almost *all* bytes in the digital universe.

## The Impact of Consumers: 2012

Total Digital Universe (538 EB)

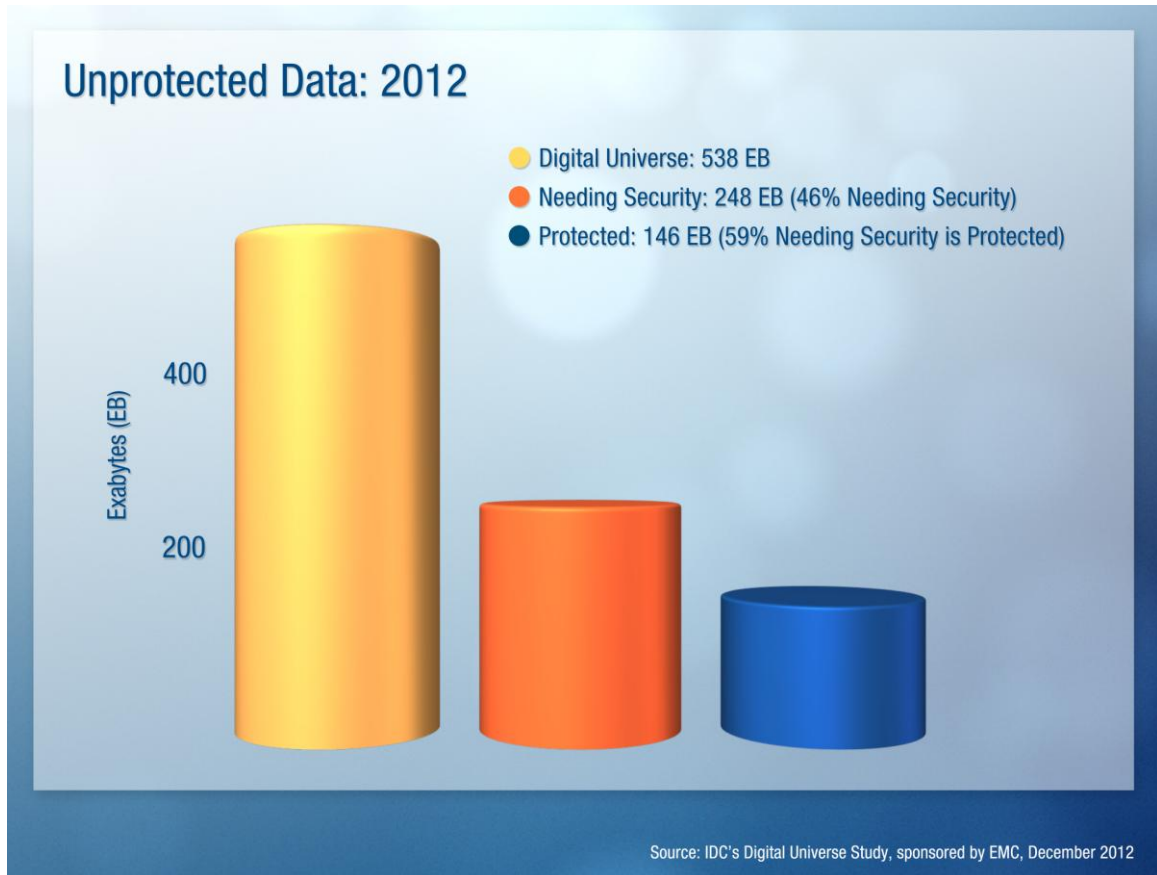


\*Enterprise has some liability or responsibility

Source: IDC's Digital Universe Study, sponsored by EMC, December 2012

This responsibility for information security and privacy protection for so much of the digital universe is one of the key challenges for the CIOs, data scientists and architects, governments, and enterprises driving the development of the digital universe, especially in Western Europe, where consumers are very sensitive to information security and privacy issues.

IDC analysis of the information in the region's portion of the digital universe by category of information indicates that 46% of it might need information security at some level (much of the rest is the transient data mentioned earlier). At the same time we estimate that less than 60% of that *needing* protection actually *has* those protections (see Figure 3).

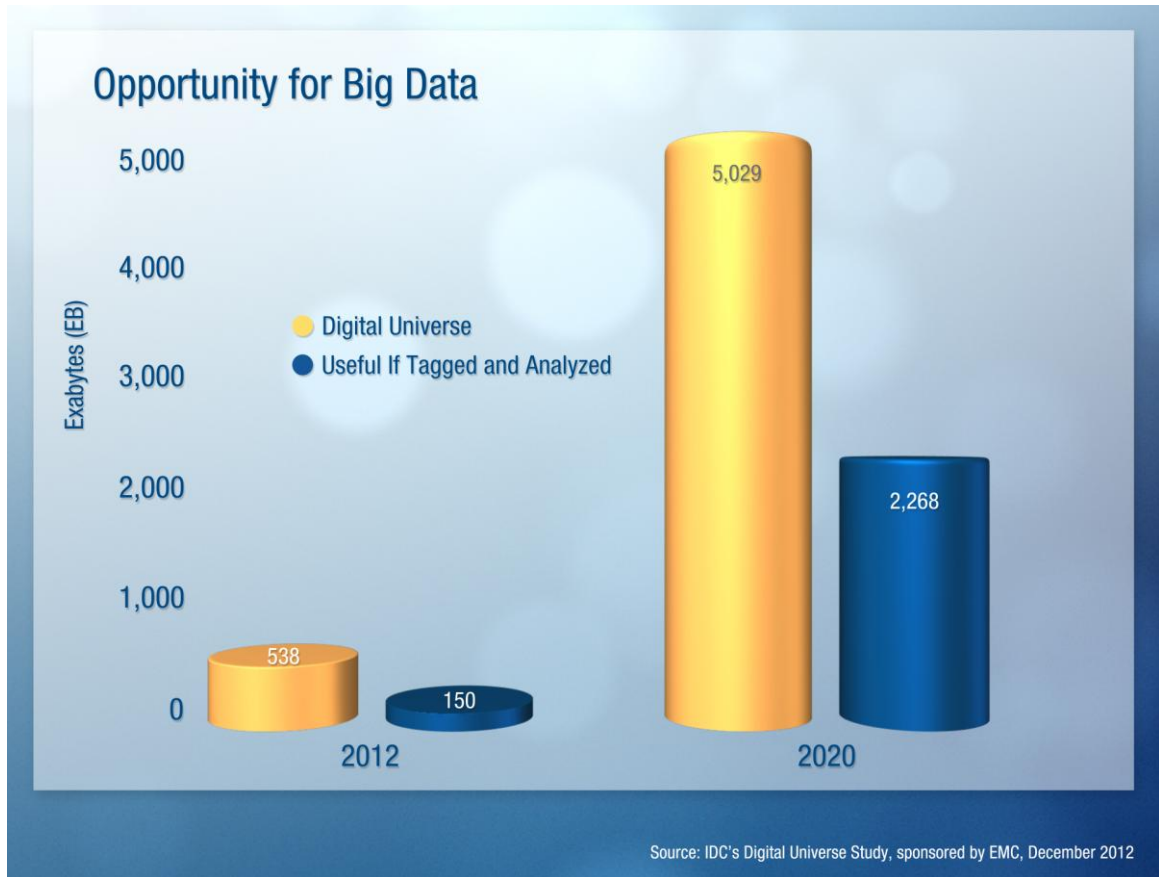


As the years go on, the challenge is clear: to increase information security and privacy protection fast enough and competently enough to keep up with that tenfold growth of the Western Europe digital universe.

### Opportunity for Big Data

One of the ironies of the digital universe is that as soon as information is created or captured and enters the digital cosmos, much of it is lost. If a lot of it is not stored (see above), even more is not tracked or analyzed. Of course, not all of it would be of value if it were tracked, but certainly some of it would be.

IDC estimates that in 2012, 28% of the region's share of the digital universe would be valuable were it tagged and analyzed. We also estimate that less than half a percent ever *is* analyzed. By 2020, we expect the percentage of the region's share of the digital universe that would be useful if tagged and analyzed will be much bigger, 45% (see Figure 4). That's 15-fold growth of useful information, which should be an inspiration for the adoption of Big Data technologies and practices. However, in Western Europe specifically, the potential to track and analyze data needs to be balanced with the respect for information security and privacy regulations and concerns.



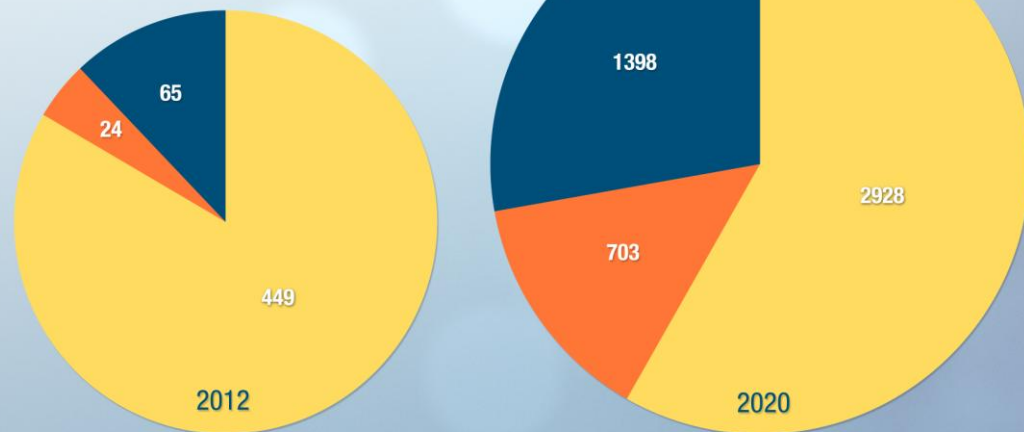
## Impact of Cloud Computing

As the region's digital universe doubles every two and a half years — compared to the growth of IT professionals in single digits a year — the complexity of managing, securing, storing, and extracting value from it increases considerably. Dealing with this complexity implies a new economy of scale revolving around specialties — an incentive for cloud computing.

Although cloud computing is in its early days, it is already having an impact on the digital universe. IDC estimates that in 2012, of the region's share of the digital universe 17% was in some way "touched" by the cloud — stored, transmitted, or processed. By 2020 that percentage could be as high as 42% (see Figure 5).

## The Digital Universe and the Cloud

- Not "Touched" by the Cloud (EB)
- Stored in the Cloud (EB)
- Additional "Touched" by the Cloud (EB)\*



\*Enterprise has some liability or responsibility

Source: IDC's Digital Universe Study, sponsored by EMC, December 2012

### Call to Action

In just five years, the Western Europe share of the digital universe will be about the same size as the entire digital universe in 2012. Its share of the digital universe will be many times more valuable than today, but also many times more volatile. Many times more bytes will need information security, many more systems will need real-time responses, and many more demands for reliability and speedy access will be made of the IT managers, CIOs, data scientists, and chief security officers that manage the actual digital universe.

Technology will evolve — algorithms for automatically creating metadata for unstructured data, Big Data software that enables analysis of large, diverse data sets, optimization software for real-time systems, and, of course, information management, data deduplication, and cyber security tools. But the right technology tools will be necessary but not sufficient for the taming of the region's digital universe. It will take new management practices, user education, and savvy policies. This is the area where the technologists must rely on support from business units, government, and consumers, and it is likely an area with bigger challenges than the technological realm.

No country, no region, no company can halt the expansion of the digital universe. One can only prepare as best as possible.

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