

# INVESTMENT FOCUS

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## BIG DATA : THE DIGITAL REVOLUTION TRANSFORMING THE CORPORATE WORLD

Artificial intelligence, connected devices, machine learning and algorithms; these concepts that have been making the headlines share a common denominator: Big Data. What economic reality hides behind this terminology? Is Big Data a real secular trend? Does Big Data really offer companies potential for creating value, and if so, which players are concerned?

The concept of Big Data was born from the need to qualify the huge expansion in the volume of computerised data companies have been dealing with in recent years. This data comes from many sources - messages that we send, videos we publish, weather information, GPS signals, on-line transactions - and major commercial interests are at stake. To get a general picture, 90% of existing data has been created over the past two years and the production of data should expand 8-fold within the next 5 years, according to the forecasts of Gartner.

### INCREASINGLY DIVERSE COMPUTERISED DATA:



#### Connected devices:

Connected bracelets, integrated sensors in industry and cars... Between 50 and 100 billion devices will be connected by 2020

A few  
data  
sources



#### Social networks:

500 million Tweets are published every day and 1 billion people connect onto Facebook



#### Videos:

3 million videos are viewed every minute on Youtube

#### Publications :

150 million emails are sent every day



### » BIG DATA: A NEW SOURCE OF ADDED VALUE FOR COMPANIES

Big Data offers companies tremendous opportunities. Using the data can help them reduce risks, contribute to their decision-making process, or give them a competitive edge through predictive analytics and an increasingly personal and contextual customer experience.

Tech companies were naturally the first to have delved into this sea of data. Over recent years, tech industry giants such as IBM, Cisco or Microsoft have been investing vast amounts into developing software capable of dealing with these substantial volumes. Traditional players from other sectors (banks, car manufacturers, healthcare companies for example) are launching numerous initiatives based on the deployment of Big Data technology, while companies whose business models are directly based on Big Data are constantly innovating.

The use of Big Data has been expanding at an unprecedented pace over the past few years. The dissemination of Big Data is expected to have such transformative impacts in many industries that no one would dream of questioning its economic reality. Healthcare, the automotive industry, services, banking and insurance – no sector is immune. Companies, from start-ups to multinationals, are investing in the use of data to leverage on this new source of added value.

Source: IBM and Oliver Wyman.

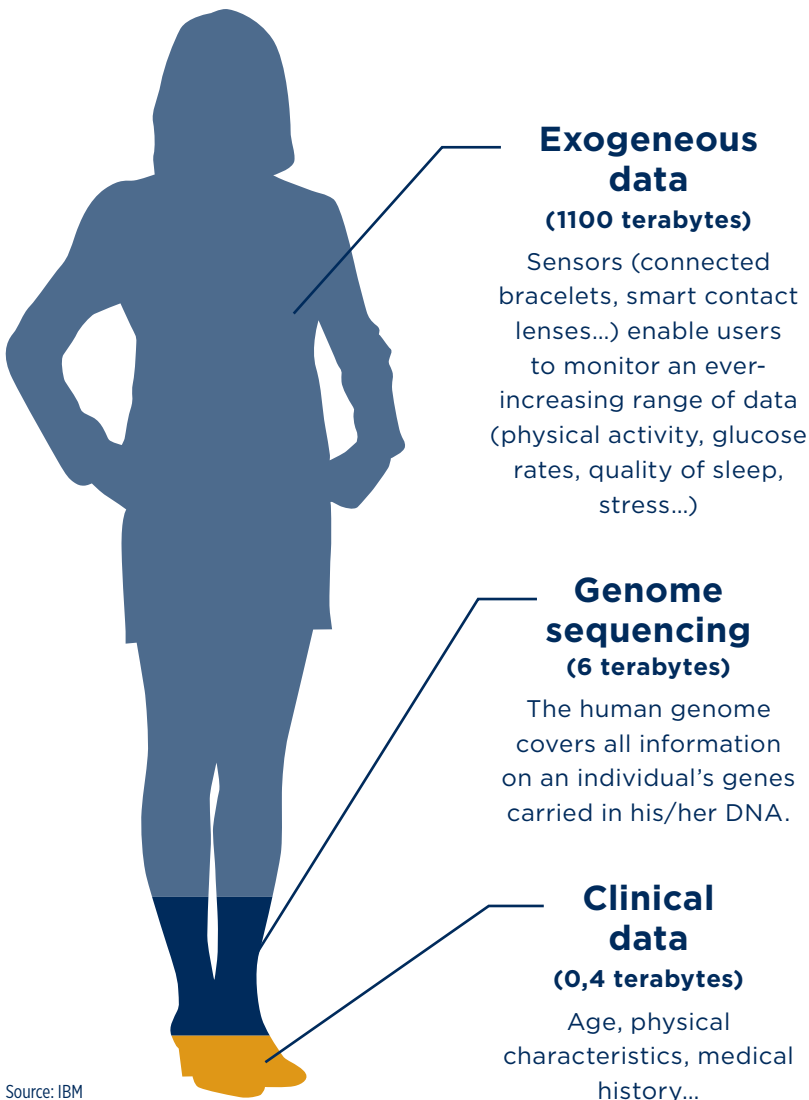
1. The fund managers may change during the product's life.

► **EXAMPLE IN HEALTHCARE:  
FROM DIAGNOSIS TO GENOME  
SEQUENCING**

Health-related data is expected to grow 50-fold by 2020<sup>1</sup>, offering unprecedented potential for innovation: identification of medical risk factors, help with diagnosis decisions, help with the choice of treatments and the monitoring of their effectiveness, pharmacovigilance, epidemiology...

This data, which is still relatively poorly organised or patchy, serves as the foundation for a large number of transformative and promising initiatives. There is substantial room for improvement and many opportunities are being created.

**VOLUME OF HEALTH-RELATED DATA GENERATED BY  
A SINGLE PERSON DURING THEIR LIFETIME**



Source: IBM

**The Healthcare industry is particularly exposed to transformational and promising Big Data projects**

Google, as an undisputed leader, is expected to play a major role in the development of the Big Data theme – notably in the field of healthcare. Alphabet, Google's mother-company, is investing billions in the sector via several of its subsidiaries.

These include Verily, which has been developing smart contact lenses that can measure glucose rates in people's tears, in partnership with Novartis, since 2014. The subsidiary is also working on algorithms for understanding diseases and electric impulse treatments, and has entered a partnership with Johnson & Johnson in the field of robotic surgery.

In 2016, with its Watson artificial intelligence programme, IBM successfully achieved the "human" diagnosis of a cancer sufferer and offered a more adapted course of treatment.

These examples serve as perfect illustrations of the shared objective put forward by Big Data players in Healthcare: the emergence of 4P medicine - predictive, personalized, preventive and participatory.

1. Source: Orange Healthcare

» **DRIVERLESS CARS: WILL ACCIDENTS BECOME A THING OF THE PAST?**

Sensors have been present in our cars for a long time now; amongst other things, they measure tyre pressure, or oil and fuel levels... However, Big Data players are about to revolutionise the car industry in their quest to make driving safer, more responsible and environmentally-friendly.

There are now over 100 sensors (radars, high resolution cameras or optical and thermic sensors) on modern cars, offering all types of driving assistance: traction control, ready alert brakes, or gear changes to save on petrol consumption.

These innovations, designed to offer new services or an improved driving experience, are expanding fast. For example, some cars are now able to analyse the driver's face to analyse his or her state of tiredness and attentiveness, and possibly suggest a break. It is also worth noting that some of these innovations have become official requirements. In 2015, the

European parliament set new standards for car manufacturers that will come into force on March 31st, 2018: all new cars will have to issue an automatic emergency call in the event of an accident.

There is only a short step separating these Driving Assistance innovations from driverless cars.

And some players have taken the plunge: new manufacturers such as Google or Tesla, as well as traditional companies like BMW, relying on IBM's artificial intelligence tool Watson, are dreaming up the cars of the future.

The German manufacturer has put Big Data at the heart of its development strategy. One of its objectives is to use data and predictive analysis to anticipate any defects prior to production (thereby

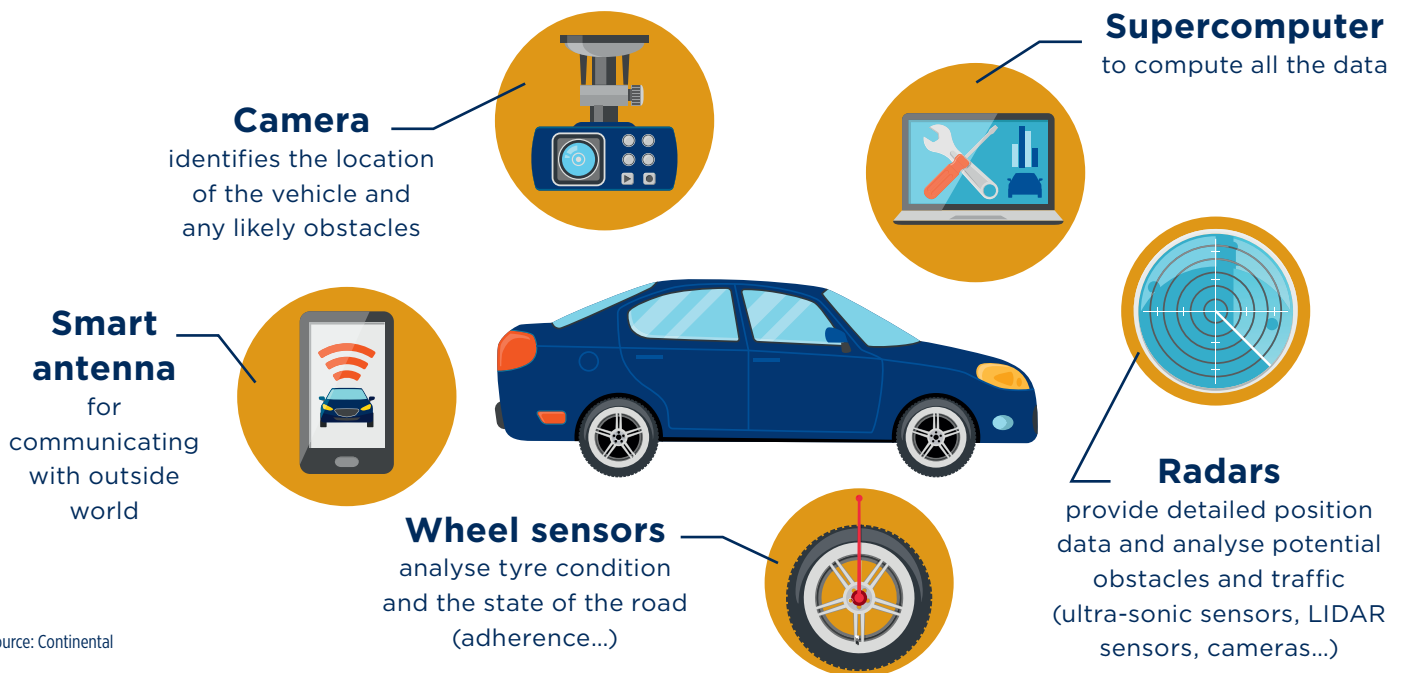
avoiding costly recall campaigns) or to prevent potential breakdowns. BMW could thereby optimise its entire industrial chain, while offering clients additional services. The manufacturer has also partnered up with other companies to take-over Here, a former subsidiary of Nokia specialised in the management of location data. The partners wish to pool together their data to improve their use and offer new services, such as the real-time analysis of traffic data or the availability of parking places in the vicinity.

The growing number of functionalities and the emergence of driverless cars are now challenging the breakdown of added value within the car industry. Will Big Data transform the cars of tomorrow into digital services rather than consumer goods owned by individuals?

2. IHS - Markit

**21 million driverless cars will be on the road in 2035<sup>2</sup>**

**BIG DATA ECOSYSTEM IN DRIVERLESS CARS**



Source: Continental

## EDMOND DE ROTHSCHILD FUND **BIG DATA**

### » **BENEFIT FROM THE BIG DATA REVOLUTION BY INVESTING IN INTERNATIONAL COMPANIES**

Big Data is a long-term theme that has the potential to transform many industries. To capture the opportunities offered by this revolution, Edmond de Rothschild Asset Management launched the Edmond de Rothschild Fund Big Data fund in August 2015. The fund's objective is to select

companies whose business is directly related to the Big Data theme, as well as those able to transform their model via the use of Big Data. The corporate strategies of the selected companies will therefore be assessed using a Big Data "lens".

**The strategy is managed using a cross-cutting perspective designed to build a diversified portfolio centred around 3 stock types:**

#### **DATA USERS**

Non-tech companies that have already made use of Big Data in their core business with a view to developing a competitive edge.

*Example: healthcare company using Big Data (genome sequencing...).*

*Stock examples: Axa, BMW...*

#### **INFRASTRUCTURES**

Companies that collect data produced by Big Data players (sensors, Internet) and make this information available.

*Example: data storage centres.*

*Stock examples: Mobileye (develops anti-collision and driver assistance systems), Sensata (manufactures sensors for use in cars).*

#### **ANALYTICS**

Companies that publish the software needed to analyse this data.

*Example: resource management algorithms (energy, transport...) of a city-wide scale - Smart Cities.*

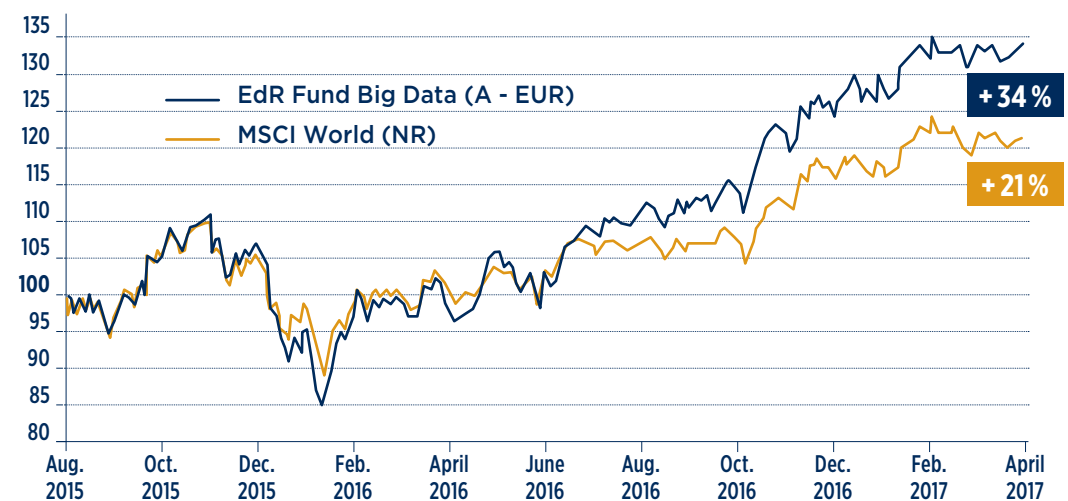
*Stock examples: Medidata (offers IT solutions dedicated to medical research), Benefit Focus (software publisher that develops tools for analysing a given company's strategy based on data).*

The Edmond de Rothschild Fund Big Data fund has delivered returns of 34% since its launch in August 2015, outperforming the MSCI World (NR) index by 13%. Big Data plays have posted attractive growth rates, demonstrating the strategic nature of the solutions they offer.

The strategy focuses principally on companies that benefit from quality Big Data-related technology that is integrated to their business development model, whilst also offering compelling valuations.

Some industries – car manufacturers, healthcare, banking and insurance – have already taken on board the major implications of Big Data. These are the sectors the fund currently focuses on.

#### **PERFORMANCE OF THE FUND SINCE INCEPTION**



**Past performance is no guide to future returns and is not constant over time.**

Performance of the Edmond de Rothschild Fund Big Data sub-fund (A EUR share class) from 31/08/2015 (inception) to 28/04/2017. Source: Edmond de Rothschild Asset Management (France). Edmond de Rothschild Fund Big Data is a sub fund of the Luxembourg-regulated SICAV which is approved by the CSSF and approved for marketing in France, Belgium, Germany, United-Kingdom, Italia, Luxembourg, Switzerland and Spain.

## A FEW EXAMPLES OF OUR CONVICTIONS

### IBM – ANALYTICS

IBM is no longer the plain PC manufacturer it once was. In recent years, the company has totally transformed, focusing its development on the use of computerised data.

IBM’s artificial intelligence programme, called Watson, offers numerous services and integrates an ever-growing number of applications. Watson is used by BMW to develop the connected car of the future, but also by banks to improve the safety of their clients’ transactions.

Watson is also used in healthcare. Demonstrating its ambitions in the field, IBM has taken over several data-owning companies, including Explorys in 2015 or Truyen early in 2016 (both manage and analyse health-related data).

» **2.7 %** of the portfolio as at 28/04/2017

ARTIFICIAL INTELLIGENCE: APPLICATIONS ARE INCREASINGLY BROAD



### AXA – DATA USERS

As one of the world’s leading insurance companies, Axa is a digital transformation pioneer within the industry.

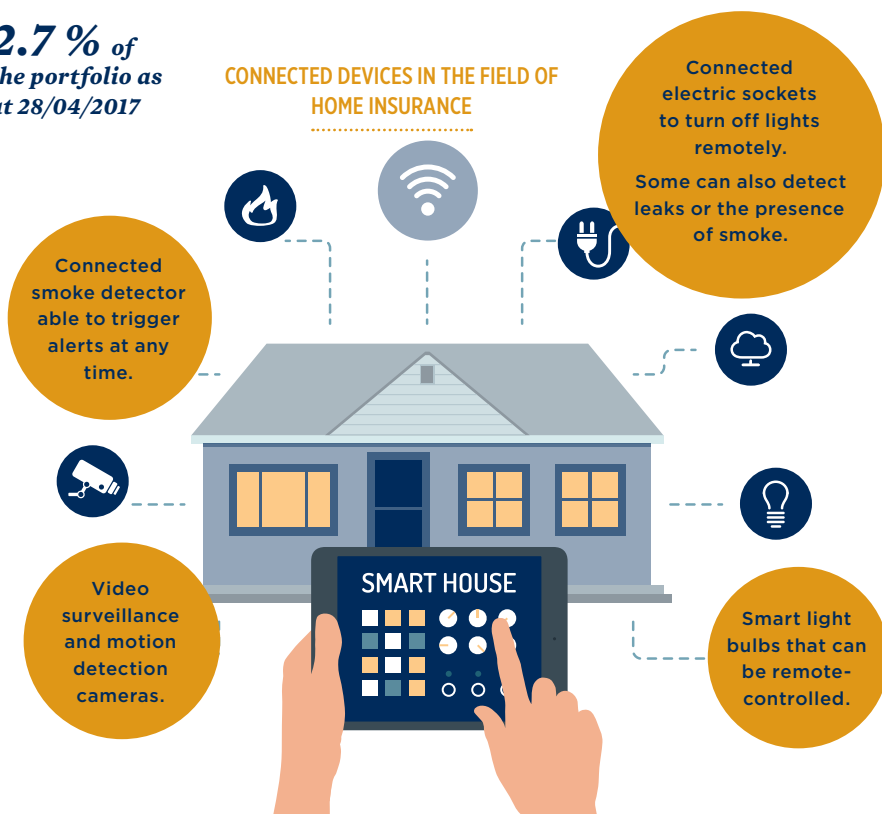
Axa’s objective is clear: to use Big Data to offer clients new services that better serve their needs, such as “pay-as-you-drive” car insurance contracts.

The French insurer has also developed a smartphone app in partnership with companies that market connected devices. This app enables its users to manage several devices from their mobile phones (sensors, cameras, lighting systems, electric sockets....) with a view to improving home safety.

The data collected will also enable the company to offer tailor-made home insurance contracts based on their client’s behaviour and habits.

» **2.7 %** of the portfolio as at 28/04/2017

CONNECTED DEVICES IN THE FIELD OF HOME INSURANCE



## INTERXION – INFRASTRUCTURE

► **2.9 %**  
of the portfolio  
as at 28/04/2017

The development of IT infrastructure companies, notably data storage centers, is intrinsically tied to the expansion of Big Data. The surface area dedicated to Data Centers is expected to grow over 20% by 2020<sup>1</sup>. Reliance on these external storage facilities is expanding at such a pace that 25% of corporate data will be stored in the Cloud by 2020<sup>1</sup>.

Interxion is one of Europe's leading players in this field, with over 40 Data Centers and ambitious plans for development. With a solid footing across Europe, the company enjoys a clear competitive edge. Some companies are legally bound to store their data in their own country, while others have a critical need for fast data transfer to support the next generation of services (driverless cars, remote surgical operations...).



1. Source: Data Center Dynamics Intelligence – 2016. Information on individual stocks should not be construed as an opinion from Edmond de Rothschild Asset Management (France) on the foreseeable performance of these afore-mentioned stocks, or where relevant, on the foreseeable performance of the financial securities they may issue. This information should not be construed as recommendations for the purchase or sale of these securities.

### KEY POINTS

- The fund aims to leverage on the digital revolution by focusing principally on companies whose business is directly related to the Big Data theme, as well as those able to transform their model by using Big Data.
- A secular trend that offers growth potential across the full economic spectrum.
- A conviction-driven approach, based on fundamental research and designed to select players that have fully integrated the implications of Big Data.
- The fund is actively managed with a view to delivering returns across a full business cycle; it carries a risk of capital loss on its equity component.

### SUB-FUND INFORMATION\*

**Inception date** 31/08/2015

**ISIN Codes**

A Share: LU1244893696 / I share: LU1244894231

**Front load charge** Maximum 3%

**Minimum initial subscription**

A Share: 1 share / I Share: € 500 000

**Management fees**

A Share: 1.70% max. / I Share: 0.75% max.

**Variable management fees**

15% of performance in excess of the benchmark

**Redemption charges** None

**Benchmark**

MSCI World (NR), net dividends reinvested

**Recommended investment horizon** > 5 years

\* Shares described herein are the main euro-denominated shares. The fund also has shares in USD, CHF, GBP.  
Please ask you sales contact for any further information.

### PRINCIPAL INVESTMENT RISKS

The fund is a category 6, or high risk/return fund profile which reflects its ability to be up to 110% exposed to equity markets. Investments made by the fund are subject to market trends and fluctuations. Investors may not recover the amount originally invested. The risks described below are not exhaustive: it is the responsibility of investors to analyse each investment's risk and to come to their own opinion.

**Equity risk:** share prices may move in line with factors specific to the issuing company but they may also react to external political and economic factors. Equity market fluctuations may entail changes in the sub fund's net asset value and might have a significantly negative impact on its performance. The fund's performance will depend on the companies selected by the asset management company.

**Risk from investing in small and mid caps:** These stocks have smaller free floats. Market moves are consequently more pronounced both on the upside and the downside and faster than with large cap stocks. The Subfund's net asset value may as a result see faster and wider swings.

**Exchange rate risk:** this may exist when stocks or investments are denominated in a different currency than that of the sub fund. If the currency of portfolio holdings falls against the sub fund's reference currency, the euro, the fund's NAV could also fall.

**Interest rate risk:** funds holding debt securities and money market instruments are exposed to fluctuations in interest rates. The risk is as follows: rising interest rates cause bond valuations to fall and thus a decline in the sub fund's net asset valuation.

**Credit risk:** valuations of debt securities and other financial instruments are influenced by the issuing company's credit rating. As a result, their capital value fluctuates according to the market's perception of the financial health of their issuers and this may entail a fall in the sub fund's NAV if the outlook turns negative. Credit risk corresponds to the risk that an issuer of bonds or money market instruments might not be able to honour his commitments.

**Risk of concentration** (the investments in certain specific sectors of the economy can have negative consequences in case of devaluation of the concerned sectors).



**INVESTING IN COMPANIES WHICH SEE  
THE WORLD IN A DIFFERENT WAY**



**EDMOND  
DE ROTHSCHILD**

*CONCORDIA - INTEGRITAS - INDUSTRIA*

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