

I Always Feel Like Somebody's Watching Me

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*"I always feel like somebody's watching me.
And I have no privacy."*

— Rockwell

The lyrics to Rockwell's 1984 hit Somebody's Watching Me are the musings of a paranoid individual worried that his neighbours, his mailman and the IRS are watching him. Notable for Michael Jackson's unaccredited backing vocals — who had his own anxieties surrounding privacy — the song foreshadowed broader society's privacy concerns which have accompanied technological advances. Coincidentally, 1984 was also the year the first U.K. Data Protection Act was passed. Since then, concerns about data privacy and cybersecurity have grown far beyond the snooping mailman, due to the internet, the volume of data gathered and developments from spyware to smart TVs that actually do watch back.

For investors who consider such factors, data privacy falls within the Social pillar of Environmental, Social and Governance (ESG) considerations and, in our opinion, are of material importance. It appears that investors have begun to recognise that these attributes can translate into tangible value.

Regulations and relationships are changing

For those who invest with an eye toward ESG factors, recent regulations on data protection could influence their investment decisions. In May 2018, the European Union (EU) General Data Protection Regulation (GDPR) will become effective. Its goal: To give EU citizens control over their personal data.

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The relationship between companies and consumers is likely to change as a result, with implications for consumers, companies, sectors, investors and geopolitics. Because large companies are global—trading with Europe and using European data—the GDPR regulation will likely have far-reaching effects with respect to how these companies handle this personal data.

The GDPR provides a strict compliance regime with significant penalties for non-compliance of up to 4% of a company's annual global turnover or €20 million, whichever is higher.¹ Along with responsibility, accountability (making automated decisions such as profiling contestable), explicit consent, and data portability, the regulations include a new right to erasure, a more limited version of the right to be forgotten.

In the past, data breaches in the EU often went unreported. Under new regulations, an organisation has 72 hours to notify the relevant local authority of a regulatory breach.

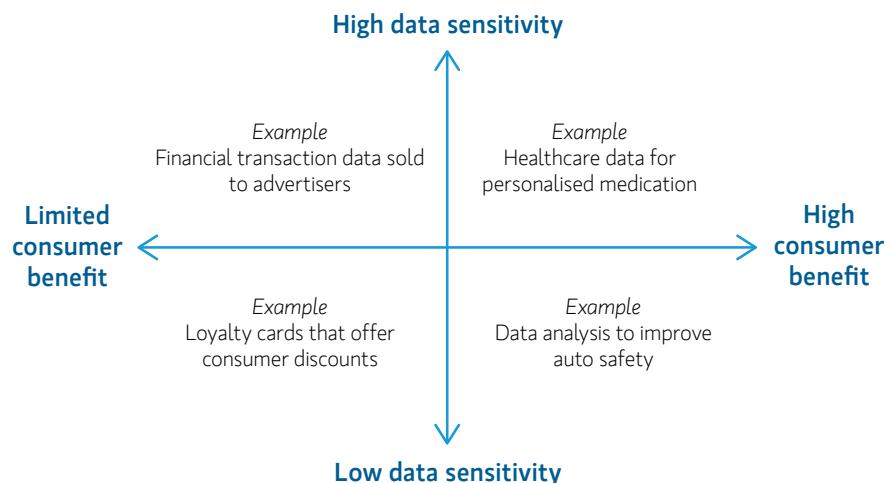
The GDPR provides a good case in point that investors who purchase shares of companies that are behind the curve in terms of data privacy protection capabilities and general cybersecurity – could be assuming real risks. Potential lawsuits, reputational damage, revenue loss, intellectual property theft and the cost of infrastructure repairs to prevent future breaches are significant risks on their own. The prospect of a fine bolsters the case for considering a company's strict adherence to the regulations when considering potential investment.

Your data can be sold . . .

Data is obviously worth a lot more than people are being paid for it right now, since they generally give it away for free. But if you have privacy rights over your data, you could start to charge for it. For industries that have grown up around a model of data being free, this could lead to significant disruptions.

DISPLAY 1

How much would you charge to share your personal data?



Source: Morgan Stanley Research - Sustainability: 'Big Data & Consumer Trust – How Much Do You Value Your Privacy?', published 23 March 2017.

There is a massive amount of information now being put into a form that could be subject to ownership rights. That data was already owned by the companies who collected it, analysed it and sold it for big profits. The GDPR explicitly provides ownership rights for this sort of data – the kind that has commercial value – at the individual, data-subject level.

Ownership rights create a number of considerations—potential for theft, misuse, nation-state applications—but they also create enormous investment opportunities. In recent years, companies have been created specifically to allow businesses to understand what content they have on people, to give them the ability to report, to move the data from one place to another, to erase it and often to use to enhance their profits.

... so what is your price?

Looking at the sensitivity of data and people's willingness to share it can lead to a tradeoff. Medical data, for example, is highly sensitive. But if people feel it will

be used for either their personal health benefit or the broader good, they may be more willing for it to be widely used than would be the case for financial data, where sharing seems like more of a threat (Display 1).

This distinction could have a strong bearing on how much people would charge for the data when they have control over it. Because sharing health data brings additional benefits, data subjects might sell it for a cheaper price than they would with financial data. Similarly, social media offers a "value exchange" with the consumers getting a direct benefit from allowing their data to be collected. But where the value is more biased towards the company, will this reduce the willingness of consumers to give consent for data collection?

Cybersecurity: A new growth industry

One prominent consequence of the privatisation of data is that it is an asset requiring protecting against theft, which entails an enormous increase in security. The number of security incidents against

¹ Morgan Stanley Research - Sustainability: 'Data Privacy: EU GDPR "Security Solutions Stocks"', published 15 May 2017.

companies has been rising at over 60% a year since 2008, and the attacks themselves are becoming increasingly sophisticated (*Display 2*). In 2014, it was reported that businesses suffered \$400 billion p.a. worth of losses attributable to cybercrime.²

In a recent study that tracked people's major global security threat concerns across 18 countries, for example, Japan identified cybersecurity as its top concern, beating out risks like ISIS (the top concern in Europe) and climate change (Africa, Latin America). The U.S., Germany and the U.K. all considered cyberattacks their second biggest security threat.³

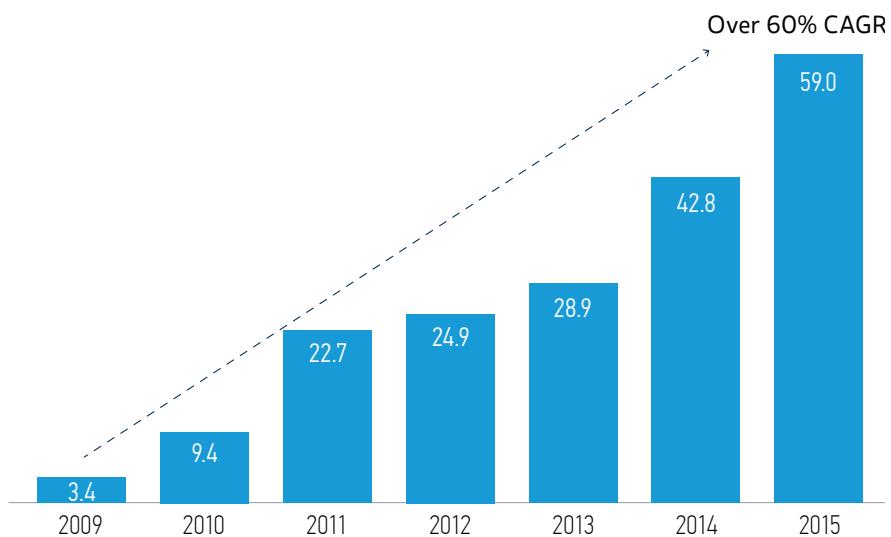
Even companies that are doing a good job of protecting their data can be vulnerable to blackmail, disinformation and destruction for its own sake from the likes of highly motivated activists with their own agendas, terrorist groups and criminal organisations. One of the two biggest recent global attacks was the WannaCry ransomware attack, which illustrated the threat posed when entities do not update their software or continue to use outdated systems that cannot be patched. The chief risks posed by cyberattacks are business disruption, information loss and subsequent revenue loss (*Display 3*). The 2017 version of Petya was substantial enough to cause at least one firm to revise its estimated sales growth forecasts.

As a result of such cyber threats, spending on security software in the Americas, EMEA and Asia Pacific (including Japan) is on a consistent upward trend, with highest spending in the U.S. – also the most advanced country in terms of legislation (*Display 4*). We would not be surprised to see other regions catch up with the U.S. in time, creating opportunities in these areas. The enforcement of the GDPR for instance, should increase cyber security spending in Europe. This supports our more general view that the economy is undergoing not just a cyclical increase in investment, but also positive secular trends.

DISPLAY 2

Data security threats rising rapidly

Number of security incidents



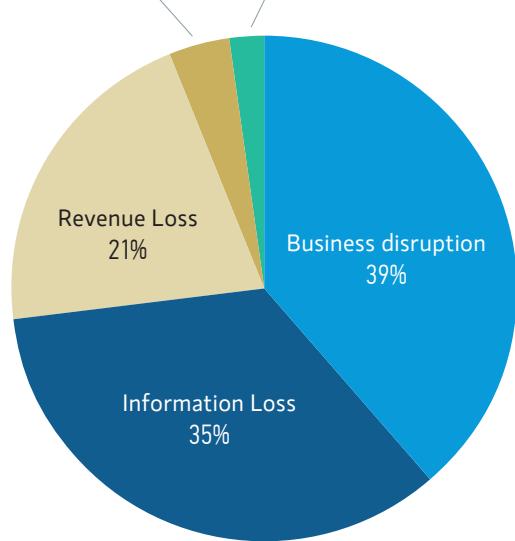
Source: PwC, CIO, CSO, Morgan Stanley Research -- Sustainability: 'Big Data & Consumer Trust -- How Much Do You Value Your Privacy?' (23 March 2017).

DISPLAY 3

Cyber attacks are costly and disruptive

Equipment Damages, 4%

Other costs, 2%



Source: Ponemon Institute, HP, 2015 Cost of Cyber Crime Study, October 2015.
Morgan Stanley Research - Sustainability: 'Sustainable and Responsible: Investor Roadmap on Cyber Security' (28 October 2015).

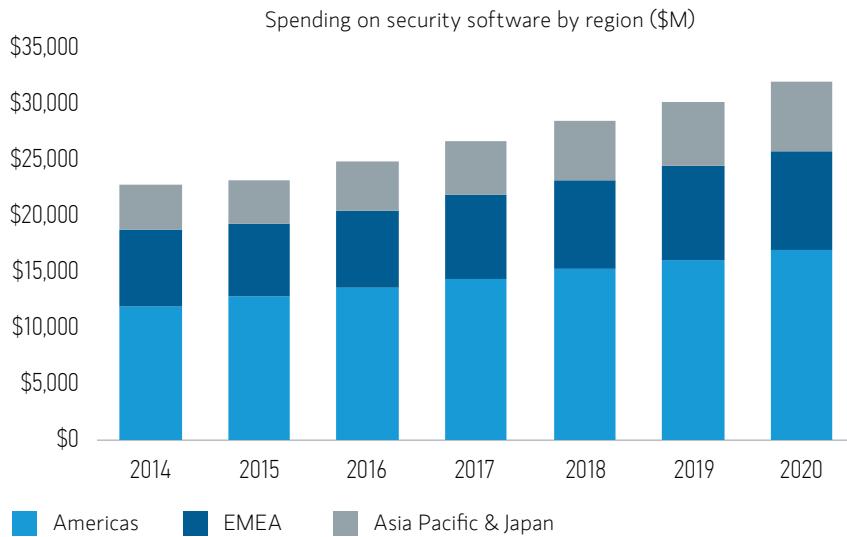
² Morgan Stanley Research: Sustainability Key Themes and Investing Trends for 2017, published 11 January 2017. Source: Centre for Strategic and International Studies (2014).

³ Source: Pew Research Center, August, 2017, "Globally, People Point to ISIS and Climate Change as Leading Security Threats. Concern About Cyberattacks, World Economy also Widespread." www.pewresearch.org

DISPLAY 4

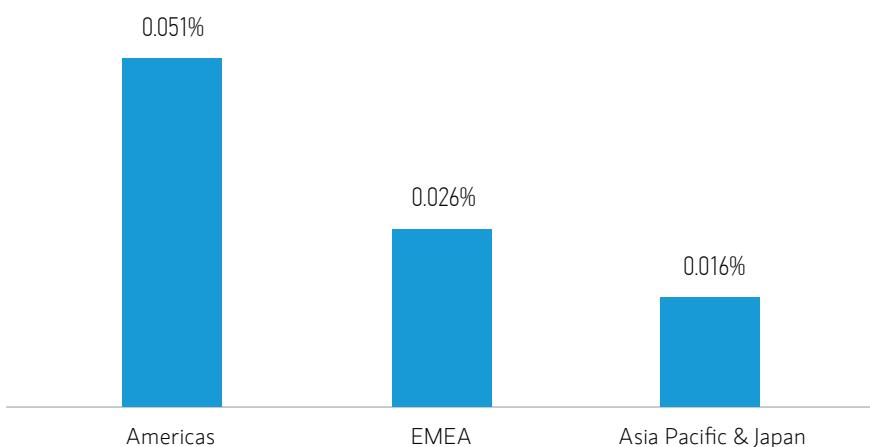
New economy: Cyberdefence spending rising . . .

Spending on security software technology across regions

**. . . and there is room to grow**

Spending lags in EMEA and Asia as a % of GDP, suggesting an opportunity to bolster cyberdefences

Security spend as a % of GDP



Source: IDC, Morgan Stanley Research - Sustainability: 'Data Privacy: EU GDPR "Security Solutions Stocks"', published 16 May 2017.

We have observed in previous commentaries that business fixed investment has been low for many years, with companies running on old equipment. Recent cyberattacks have shown that this includes old computer technology. Given the increasing cyber risks, and regulation, it seems plausible that the increase in U.S. business fixed investment seen in the last two quarters might also, include increased spending on computer software and hardware.⁴ Furthermore, as cyberattacks become more sophisticated, companies will have to continue to invest if they are to evolve their defences and keep up with the attackers.

In terms of opportunities, the flip side of cyberdefence is cyberattack, and nations are increasingly investing in cyberwarfare technology. This could lead to the creation of an entire new cyber weapons industry, with both defensive and offensive capabilities requiring significant investment and spending. Cyberwarfare also presents not only an economic opportunity, but a potential geopolitical threat – something else for investors to consider.

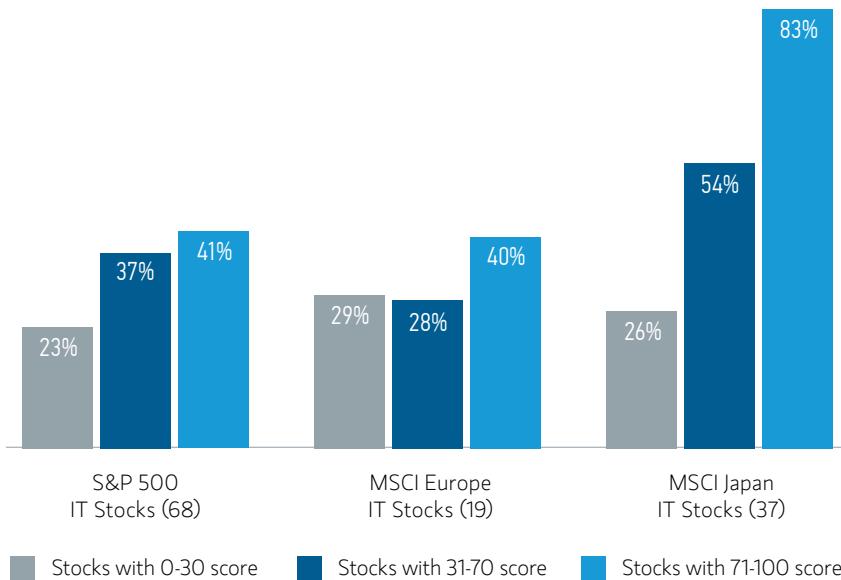
Social factors influence returns

Opportunities are not limited to the investment side. Stock prices also appear to react to how well companies handle privacy along with other ESG issues. Looking at a one-year period ending June 2017, we found that social scores in the U.S., Europe and Japan were positively associated with stock market performance in the information technology sector. In that sector, companies with the highest social scores

⁴ Source: Bureau of Economic Analysis (BEA) News Release: Gross Domestic Product: Second Quarter 2017 (Advance Estimate). www.bea.gov. Data as of 8 August 2017. Q1 and Q2 2017 estimates show a particularly striking increase in investment growth of 7.2% and 5.2% respectively. This can be attributed mainly to spending increases in infrastructure and equipment. Forecasts/estimates are based on current market conditions, subject to change, and may not necessarily come to pass.

DISPLAY 5**Strong link between IT sector social scores and stock returns**

Returns of info-tech stocks across regions, categorized by social sector scores



This index performance is provided for illustrative purposes only and is not meant to depict the performance of a specific investment. Past performance is no guarantee of future results. See Disclosures for index definitions.

Performance of IT sector stock baskets constructed based on social score. Source: MSIM. Data based on Sustainalytics and Datastream. Performance data from 30 June 2016 to 30 June 2017, scores as of 30 June 2016. Based on social score; the number of stocks examined is shown in brackets next to sector name. U.S. equities are based on the S&P 500 constituents, European equities are based on the MSCI Europe constituents and Japanese equities are based on the MSCI Japan constituents.

were also the best performers over the last year in all three regions (Display 5).

Of all the globally recorded data breaches in 2016, 80% occurred in the U.S.⁵ However, data issues are probably

the most advanced in the U.S. because the firms that have been privatising the data are mostly located there, coupled with greater legislation and reporting requirements. In 2016, the technology

sector had the greatest number of records experiencing security breaches, accounting for 28%⁵ of all breaches. The growth of the “Internet of Things”, with now billions of connected items, will likely open up new sectors to the risk of cyberattack, from household items to medical devices to autonomous vehicles.

Understanding cybersecurity and acting as responsible shepherds of customer data contributes to reduced risk for companies. It could also lead to a more attractive cost of capital and lower operating costs.

Somebody is watching you

What was paranoia in 1984 is reality in 2017. Somebody is watching you and gathering your data in previously unimaginable quantities. But with regulations such as the GDPR in Europe, you will own your data. This regulatory change is one aspect of the fast-evolving cyber-environment, which is disrupting industries worldwide.

The risks and costs to companies of not keeping up with change is evidently great, be it in the form of fines, reputational damage or lower productivity as a result of exposure to cyberattacks – each of which can erode companies’ profitability. Therefore, data privacy and security, within the Social pillar of ESG concerns, is evidently a factor worth considering when assessing investment opportunities. For investors, this trend will open up new markets, risks and potential opportunities.

⁵ Source: 2016 Mining for Database Gold: Findings from the 2016 Breach Level Index, Gemalto.

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