

# Health our only Wealth

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# 06/20

June 2020

**eHealth: The road to better health at lower costs.**

# p.04

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## At a glance

- It is clear that digitalisation has been well embraced by most parts of our society. Most, but not all, as the healthcare industry has been, so far, very hesitant to fully unleash the disruptive forces of digitalisation. This has changed as COVID-19 has kickstarted eHealth. With the use of digital tools, eHealth has the potential to lower costs and improve the outcome, as has been done in the other parts of the digital economy.
- The large majority of COVID-19 deaths already had multiple pre-existing health conditions, which leads us to believe that there will be greater pressure on the subject of healthy living. People will find themselves under greater pressure from governments and/or by society and not taking proper care of one's self will no longer be socially accepted.
- The efficient global supply chain that was able to fulfil demand "just-in-time" is changing towards more local production that will be able to produce "just-in-case" local demand, especially in the healthcare industry.
- Given the ever increasing pressure on government budgets, due to COVID-19, we expect that governments, including the US, will force healthcare to switch away from majority expensive specialty care and to move more budget towards less expensive primary care and prevention.
- It clear that with more government involvement, and changing regulations regarding the business model of healthcare companies will need to change.
- As with other major crises we expect this pandemic to also have impact on human behaviour. We expect fear about the virus to fundamentally alter mass-tourism's business model for years to come. Eating out was once a convenience. Now it's a health risk. The most striking consumption effect seen since March 2020 has been the renewed growth of home improvement.
- Health is clearly back on the agenda and seen by more and more as our only wealth.

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The healthcare industry has been, so far, very hesitant to fully unleash the disruptive forces of digitalisation.

## Introduction

Investing is always linked to a view of the future and current uncertainty appears to be at a historic high due to the COVID-19 pandemic. Given the last lockdown in the West occurred in 1666 when central banks were not yet invented, it's unclear whether massive stimulus from governments and central banks will be sufficient to avoid an economic depression. Equity markets have bounced back from the March lows and investors have apparently switched their view from the glass being half-empty to the glass being half-full. Despite most companies cutting or removing their earnings guidance, most financial analysts seem to focus on the economic recovery before the depth and timing of the bottom is known. While healthcare scientists differ widely in opinion, most expect a second and third wave of coronavirus infections in the absence of a fully effective vaccine. The Economist has pointed out that expecting a vaccine to be approved within the next 12 months is as technically unlikely as putting a person on Mars in the same timeframe. Without any hiccups, it might be theoretically possible to launch in 12 months. However, it still takes another year to get to Mars or to produce 7.5 billion vaccines.

Lenin once said "There are decades where nothing happens; and there are weeks where decades happen."<sup>1</sup> The pandemic has clearly illustrated his point as events that typically span decades occurred in the space of weeks. In the face of such uncertainty, we focus our investment strategies on secular trends that appear most likely to persist or, even better, gather speed. History has shown that a crisis, like war, a depression, or in this case a

pandemic, spurs innovation on a large scale. The Manhattan-project would probably not have been undertaken without World War II. Nor would Project Apollo have put a man on the moon without the context of the Cold War. Even the law of gravity might potentially not have been discovered as early if Isaac Newton were not quarantined to avoid the Black Death. A major crisis acts like a midwife and accelerates trends that are already present in society but still embryonic. We expect the current pandemic to act in the same way and see several secular trends entering the exponential growth phase due to strong tailwinds from the pandemic. The most important is the renewed sense that health is our only true wealth. Through lock downs, governments and societies have clearly prioritised health over GDP growth. We expect that nascent trends aiming to improve the overall health of society at potentially lower cost will enjoy strong tailwinds in the coming decade. This paper elaborates on four trends that have "better health at lower cost" at their root. We expect these to make a strong impact on the economy in general, and the healthcare sector in particular. The trends are as follows:

1. Fast forward into eHealth
2. Healthy lifestyle as ultimate prevention
3. More government and peak margins
4. Changing consumption patterns.

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**LOIM trends investing**

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<sup>1</sup> Vladimir Ilyich Ulyanov (Lenin), 1918.

# 1. Fast forward into eHealth

Digitalisation is not a new trend. On the contrary, large parts of our economy have already embraced digitalisation. It started with the consumer part of the economy with the introduction of e-commerce, followed by the invention of social media, online dating and sharing platforms like AirBnB and Uber. The current pandemic sped up digital consumption even further as it increased the popularity of eSports, even among the non-GenZ generations, as the only live sports available. The famous Louvre museum in Paris broke the daily record of visitor numbers despite the French lock down. All of them were virtual visitors who joined through one of fourteen high definition 3D tours.

The production side of the global economy has also found its way into the digital age as more and more automation and robots are introduced to factories. The internet-of-things and AI are clearly the next steps in this process and are already being taken.

Even the conservative financials industry has woken from analogue and started to use more digital tools. Digital or non-cash payments were already growing very rapidly and even sped up due to COVID-19 as e-commerce boomed and offline retailers preferred cashless payments for hygiene reasons. Due to closure of bank branches in Germany, the number of online mortgages skyrocketed. In April, the government of the US used FinTech companies to distribute the USD1200 emergency payments to citizens.

It is clear that digitalisation has been well embraced by most parts of our society. Not all, however, as the healthcare industry has been, so far, very hesitant to fully unleash the disruptive forces of digitalisation.

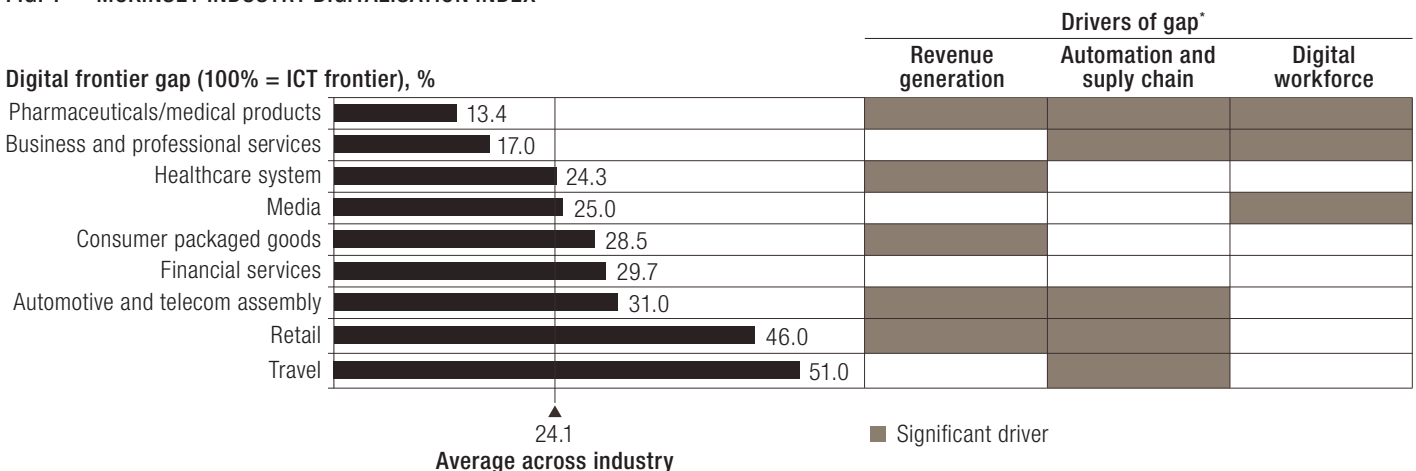
According to the McKinsey digital survey 2018 the healthcare system and medical products are the bottom industries. This is changing as during the pandemic the healthcare industry quantum leaped into eHealth.

## Expensive healthcare bill

The use of digital tools has the potential to lower costs dramatically, as it has done in the other parts of the digital economy. This is badly needed as the healthcare bill has become a substantial burden for society. In the US almost 19% of GDP is spent on healthcare, even before the peak of the baby boomers reaching an age where they will need increased medical attention. In other Western markets, this number is closer to 11% of GDP but has shown the similar growth as the US as shown in Figure 2.

The healthcare bill is caused by a small group of people. It is estimated that 5% of chronically ill patients are responsible for 50% of the healthcare spend.<sup>2</sup> Hospitals and doctors providing specialty care are the largest contributors to this bill. In most countries, a backwards incentive structure is used within the industry. Doctors and clinics get mostly paid for each treatment or service they provide and not for the outcome, giving them no incentive to avoid unnecessary treatments. Research in the US has shown, for instance, that about one-third of Americans undergo operations in the last month of life, which may be perceived as unnecessary.<sup>3</sup> Also the legal system is not helping because in the US every healthcare mistake could lead in court to bankruptcy.

FIG. 1 MCKINSEY INDUSTRY DIGITALISATION INDEX



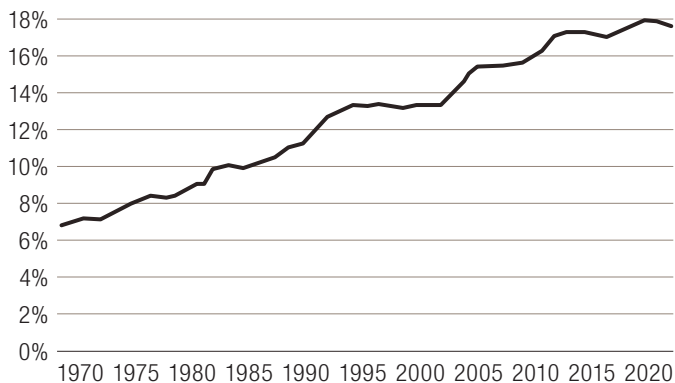
Source: McKinsey Digital Survey 2018; McKinsey Global Institute analysis. \*Lower than average industry. The McKinsey Digital Survey covered 1,600 firms worldwide, with results unweighted.

<sup>2</sup> Center for Disease Control and Prevention. Chronic disease accounts for 75% of all healthcare spend.

<sup>3</sup> Theatlantic.com/health/archive/2017.

**FIG. 2 HEALTH SPENDING GROWTH HAS OUTPACED GROWTH OF THE US ECONOMY**

TOTAL NATIONAL HEALTH EXPENDITURES AS A PERCENT OF GROSS DOMESTIC PRODUCT, 1970-218



Source: KFF analysis of National Health Expenditure (NHE) data – Get the data – PNG. For illustrative purposes only.

### eHealth: The road to better health at lower costs

We see four key digital tools within the eHealth tool box that have the potential to transform the industry by lowering costs and, in addition, have the potential to produce better outcomes, so better health.

1. Artificial Intelligence
2. Digital DNA
3. Robot surgery
4. Telemedicine

The first technology is artificial intelligence (AI) and this will be used to reduce the large administrative burden in hospitals and doctors' practices. Today it is already possible to use smart speech recognition technology to automatically fill in electronic health records and increase productivity by up to 30%. Given the huge pressure on intensive care units (ICUs) as a result of the pandemic, the request for such AI tools has already increased dramatically according to Nuance Communications, one of the key suppliers. Next to that, AI is also increasingly used to help within the research process to gain new insights into diseases leading to new therapies. According to IBM, their AI-tool called Watson is able to diagnose up to 95% of all radiology images within seconds and with less errors than humans, providing a large productivity opportunity.

The digitalisation of our DNA, as second digital tool, has started us on the road to potentially eradicating all genetic diseases, and it has opened the door to personalised DNA-based medication. On 11 January 2020, even before COVID-19 became a global health crisis, China published the full DNA sequence of the virus, kick-starting the race to find an antibody cure and even better a vaccine.

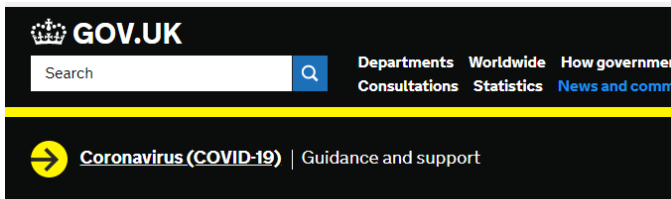
The third digital technology that offers both costs and outcomes advantage is robot surgery. Today robot surgery is already approved by regulators like the FDA for roughly twenty standard procedures. It has proven itself able to provide more precise, minimally invasive surgery that has shortened the hospital stay of patients.

When describing the fourth technology telemedicine, an old joke from the Marx Brothers comes to mind: "I wouldn't dare go to the hospital – people die there all the time." This turned out to be very true during the peak of the pandemic as most non-COVID related treatments were postponed in hospitals to avoid contamination. Video calls with doctors, and sharing health data from remote monitoring devices became standard procedure in both the US and China. This online health, or telemedicine, is now covered by most health insurance policies in these countries and is seen as a safer and cheaper solution. Hospitals also made the switch to home recovery with the use of remote monitoring. Some nursing homes moved to home care but also psychiatric care and even veterinary visits were done remotely. Even drug companies or contract research organisations CROs indicated they switched to more remote monitoring of drug trials. In addition, some drug companies expect higher utilisation of the remote selling model given its increased effectiveness and flexibility for both sales reps and physicians. Of course COVID-19 has forced patients and doctors to embrace telemedicine and let this digital genie out of the bottle, but we do not expect this to change, even after the corona threat is gone. Telemedicine has proven itself a cheap solutions for the payers, a convenient tool for patients and an efficiency provider for physicians and hospitals.

### Bye bye fax-machine

It is not that the healthcare sector was entirely devoid of digitalisation. All hospitals and doctors already used digital patient records and most of the administration was already done digitally. However, the real innovation power and deflationary forces that normally result from digitalisation were not fully realised as the data were not connected. Up till now, hospitals did not share data as the Cerner software from one hospital could not connect to the Epic software from the other. Sometimes even within one hospital different IT systems made it impossible for radiology to share data with surgery.

COVID-19 changed this overnight. As ICUs were forced to transport many patients to hospitals in less affected areas, commercial and government health plans in the US forced all medical health records to be available in real-time on different health information exchanges (HIEs). A similar situation occurred in the EU where patients were even shipped across borders as German hospitals took on patients from Italy, France and the Netherlands.



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News story

## Health and Social Care Secretary bans fax machines in NHS

Matt Hancock has banned the NHS from buying fax machines and has ordered a complete phase-out by April 2020.

Published 9 December 2018

From: [Department of Health and Social Care](#)

Before COVID-19 the most common way to share patient files was through fax-machines. Actually the UK department of Health and Social care has ordered a total ban of fax machines for the NHS, the National Health Service by April 2020. Things are finally changing.

### Consumerisation of healthcare

We expect that through eHealth the data flows within the healthcare system will change to become a patient- or consumer-centred model. Instead of insurance companies sharing data with doctors and pharmacies and vice versa, the consumer will keep their own health records and will connect to any of the healthcare providers every time they interact either physically or virtually. They will combine this health record with all of their self-collected data from their smart watch, Fitbit and all other monitoring devices.

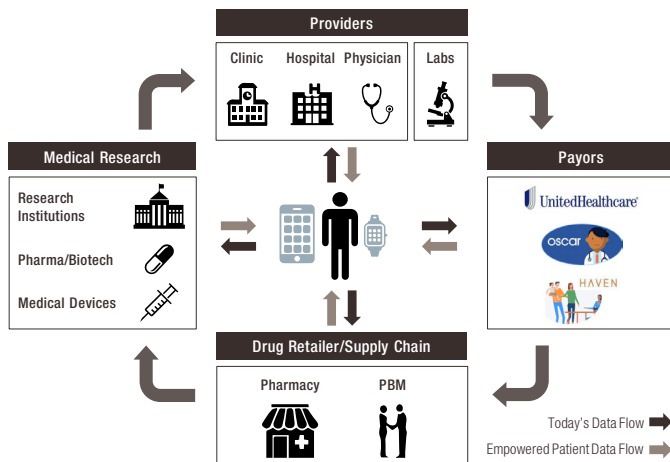
This is why Apple was so positive about the FDA approval they received in September 2019 for iPhones to contain an official electronic health record. According to chief executive Tim Cook, Apple's greatest contribution to humanity in the future will be health. We expect Apple to launch a host of new consumer driven monitoring devices and health software providing both lifestyle

and health advice based on the health records and health data of their clients.

The use of remote monitoring devices grew exponentially during this pandemic. Take for instance the permanent glucose measuring devices from companies like Dexcom and Abbott Labs. These are normally used by type 1 diabetes patients who need regular insulin shots as their pancreas no longer functions properly. During this health crisis, commercial health plans as well as US government paid plans Medicare and Medicaid decided to also provide these devices to patients with non-critical type 2 diabetes, the type mostly caused by obesity. Obese people have had larger health problems when infected with COVID-19. Also, Masimo a producer of non-invasive monitoring devices able to measure the oxygen level of blood or heart-rhythm, mentioned that for the first time their devices were more widely used than solely in ICU. Other companies have also mentioned exponential growth in professional monitoring devices in normal hospitals beds or even for home care.

In summary, we strongly believe that COVID-19 has provided a kick start for eHealth that, finally, has lifted the healthcare sector into the digital age.

**FIG. 3 PUTTING THE CONSUMER IN THE CENTRE – A NEW HEALTHCARE PARADIGM**



Source: Morgan Stanley research.

## 2. Healthy lifestyle as ultimate prevention

The way the total healthcare budget is spent today is out of sync with the roots of good health. According to a study from the Bipartisan Policy Center, only 4% is spent on healthy behaviour in the US while unhealthy behaviour is estimated to account for 50% of all diseases.<sup>4</sup> According to their estimates, a combination of regular exercise and a healthy diet can help avoid 50% of all chronic diseases today. We expect that, due to COVID-19, the required lifestyle change will actually occur for most Western and Asian people who will find themselves under greater pressure from governments and/or by society – not taking proper care of one’s self will no longer be socially accepted.

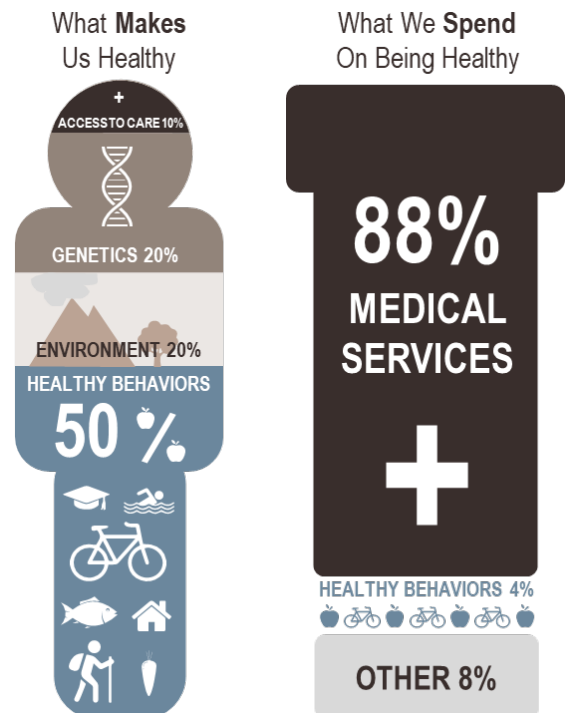
### The time bomb called obesity

According to a recent United Nations report, 2019 was the first year in history where there were more obese people on the planet than hungry. Global efforts such as the World Food Program of the United Nations have helped contribute to the decline in hunger and starvation over recent decades. This is a great achievement, however, obesity has been rising 5% worldwide and over 7.5% in Asia in the last decade and surpassing hunger. Today in countries like the US and Saudi Arabia, more than 40% of the population is medically obese.<sup>5</sup>

Jose Graziano da Silva, director-general of the UN’s Food and Agriculture Organization (FAO) labelled obesity as global epidemic issue with a very costly price tag of an estimated USD 2 trillion a year in related illnesses and other side effects. Obesity is tightly linked to an increased likelihood of heart attack and clogged arteries but especially rising prevalence in diabetes. The vast

majority of type 2 diabetes sufferers, the fastest growing chronic disease in the world, are medically obese people. Obesity is considered one of the root causes for the body to become insensitive to insulin.<sup>6</sup>

FIG. 4 HEALTHY BEHAVIOR IS THE BEST PREVENTION



Source: McKinsey “Accounting for the Cost of U.S. Health Care” (2011), Center for American Progress.

<sup>4</sup> [bipartisanpolicy.org/report/what-makes-us-healthy-vs-what-we-spend-on-being-healthy](http://bipartisanpolicy.org/report/what-makes-us-healthy-vs-what-we-spend-on-being-healthy).

<sup>5</sup> A BMI (body mass index) between 18.5 and 25 is considered healthy, between 25 and 30 is overweight above 30 is considered as obese.

<sup>6</sup> According to Basu, Yoffe, Hills & Lustig (2013) there is a statistically sound relationship between sugar consumption and prevalence of diabetes type II.

### The war on fat

The main reason people are not lowering their weight is because it is not that easy. Today, it is hard to avoid eating too much sugar or too much salt as it is added to almost all packaged food and beverages. The Western diet started to change substantially from the end of the 18th century. Previously, people's diet consisted of dairy, animal meat, seasonal fruits and vegetables, nuts, seeds and grains mostly in the form of bread. This changed as potatoes, which were previously considered pig food, and sugar, formerly a luxury item but now widely available due to mechanical sugar extraction, became part of daily meals. Combined with the introduction of white flour, made possible by the invention of the cylinder mill, our diet became enriched with sugar while all other nutrients, like vitamins, fibre and proteins were lowered. The industrialisation of food in the 20th century created, on top of that, cheap cheese, jams, oils and butter and introduced sugar-coating as preservation technique for packaged food. Even more industrialised carbohydrates and sugar came with the US invention of fast food.

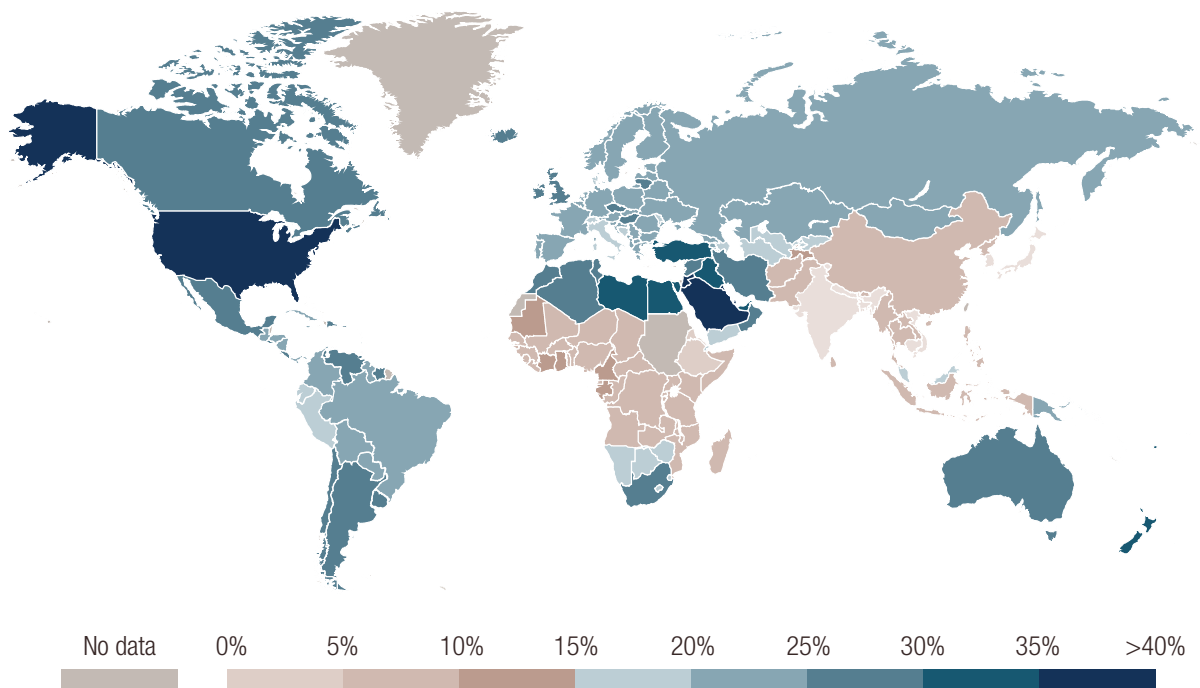
On 23 September 1955, something occurred that sped up change in Western diets. On that day, US president Eisenhower suffered a heart attack due to coronary thrombosis. Contrary to

his predecessors, Eisenhower was very open about his medical condition and even organised a press conference outside the hospital together with his cardiologist, and a nutritionist by the name of Ancel Keys. Eisenhower was not the only one at the time, as the US had experienced a rapid rise in the number of heart attacks in its adult population. Cardiovascular diseases became the number one cause of death in American society. The public advice from his physicians was to stop smoking and cut down on fat and cholesterol, as increased cholesterol levels in the blood cause heart attacks and coronary thrombosis. The idea that eating fat makes you fat was programmed into the American mindset and led to changing eating habits.<sup>7</sup>

Based on further research from Ancel Keys, the US updated its Dietary Guidelines in 1980. According to these new guidelines, consumers should cut back on saturated fats and cholesterol. Almost all packaged food items introduced (more expensive) light versions of their products, in which fat was mostly replaced by more sugar. US consumers listened well to the new advice and massively replaced steaks with pasta, butter with margarine, eggs with muesli and milk with orange juice. Or in other words, consumers replaced proteins and fat with carbohydrates and sugar. This had a devastating effect on the health of the US population. Unfortunately, other countries have followed the US diet.

**FIG. 5 SHARE OF ADULTS THAT ARE OBESE, 2016**

OBESITY IS DEFINED AS HAVING A BODY-MASS INDEX (BMI) EQUAL TO OR GRATER THAN 30. BMI IS A PERSON'S WEIGHT IN KILOGRAMS DIVIDED BY HIS OR HER HEIGHT IN METERS SQUARED



Source: WHO, Global Health Observatory.

<sup>7</sup> Also Eisenhower changed his diet and stopped eating his daily steak. Unfortunately, it did not help Eisenhower much. He suffered from six more heart attacks until his death in 1969.

## Government intervention

Who is responsible for the health consequences of a Western diet? So far, no court in the world has ruled that the food industry has any responsibility. The barriers to win a legal claim against the food industry are extremely high and most politicians, so far have been on the side of the food industry. In the US, for instance, 26 states have banned lawsuits against fast food, restaurants and the food industry.<sup>8</sup>

However, the tide seems to be turning as several countries have introduced a sugar tax. Mexico introduced a 1 peso or 10% sugar tax in 2014. Other countries like the UK, Saudi Arabia, Australia, France and India have followed within the last five years. Some individual cities in the US have also introduced a local soda tax and the subject of sugar tax has been a growing subject of debate on the state and federal level.

The first results of the government intervention in our diets are promising. The best example is Norway, where the consumption of sugar has dropped from 43kg per person per year in 2000 to 24kg in 2018, after it increased the sugar tax rate to the highest levels worldwide. Neighbouring country Finland has been the lead example in government intervention in lowering the salt content in packed food and bread. Due to a combination of public awareness, salt labelling and taxation, the salt intake in Finland has dropped from 12.3 grams per day in 1970 to 6.8 grams in 2010. This unfortunately is still above the maximum WHO recommend amount of 5 grams per day.

Knowing that most governments are in desperate need of new sources of income during the COVID-19 crisis, we expect more countries to follow the taxation route with sugar and salt. Next on the political agenda could be the lowering of VAT on vegetables, perhaps sponsored by an increase in VAT on less healthy food. Today a bottle of ketchup, containing over 20% additional sugar, is less expensive in the supermarket than the amount of tomatoes that are needed to produce the ketchup. As long as unhealthy food is still less expensive than healthy food it will very hard to change the eating habits for the non-rich part of society. Unfortunately health and wealth go hand in hand today as there is a strong negative correlation between household income and both obesity and diabetes.<sup>9</sup>

Today most politicians are not ready to start an ethical debate on allowing lifestyle-driven risk factors like smoking and high BMI's to differentiate health insurance premiums, but it would make sense as a next step. In Sweden and the Netherlands, healthcare insurance has already been incentivising clients to increase their

daily exercises by supplying them with activity monitoring devices and offering them lower insurance premiums when a certain amount of exercise has been performed. We expect more government intervention into the diet in the future, especially as social pressure is increasing for people to take good care of themselves.

## Social pressure

The large majority of COVID-19 deaths already had multiple pre-existing health conditions, which leads us to believe that there will be greater pressure on the subject of healthy living. We do think public opinion about having an unhealthy lifestyle is in the process of changing and becoming less forgiving. We expect that after the lock downs, obesity will be seen by society in a more similar manner to smoking. Smoking has changed in the last 25 years from being socially accepted, allowed in offices, classrooms and parliaments to being completely unaccepted. Smoking today is banned indoors and only permitted in dark alleys at the back of the office.

As with the other trends in this paper, obesity-pressure is nothing new. Fat-shaming was already a controversial expression used before COVID-19, to put pressure on (medically) obese people to change their lifestyle. The current pandemic is providing a large tailwind for leading a healthy lifestyle, which was already well embraced by the younger generation GenZ and Millennials. We expect older generations and especially baby boomers to follow their healthy lead going forward.

## Healthy lifestyle as solution

A healthy lifestyle must also include an active lifestyle. It not just an apple a day that keeps the doctor away but also a daily walk in the park. With the help of smartphones, smart watches and other devices, technology companies like Apple and Samsung are trying to tap into this trend. That is why, we believe, Apple wants medical health records stored on iPhones, and that is why Google has put an offer on the table for Fitbit. The consumerisation of healthcare, as discussed in the previous section, is also about the move towards a healthy lifestyle. These IT platforms seek to become people's AI-driven fitness coach, mental coach, dietician and in the future perhaps even their physician.

Also the global sporting brands have discovered the COVID-19 tailwind. Adidas CEO Rorsted mentioned during last quarterly meeting that he sees physical wellness becoming even more important after the crisis as only a minimal number of well-trained people were admitted to the hospital with COVID-19 problems.

<sup>8</sup> The federal law to ban legal action against the food industry, called cheeseburger bill, was blocked in the Senate in 2004.

<sup>9</sup> See Bentley, Ormerod & Ruck: "Recent origin and evolution of obesity-income correlation across the United States."



### 3. More government and peak margins

Recently, the French pharmaceutical giant, and one of the largest global vaccine-producers, Sanofi sparked outrage in France when its chief executive said the US would likely receive initial doses of its vaccine, since the US provided funding for its development. In response, the French government applied pressure to Sanofi to ensure an equitable supply of its vaccine is available for the people of France, forcing Sanofi to withdraw their statement. Similarly, AstraZeneca is currently working with Oxford University to develop and produce another COVID-19 vaccine. The company said it would prioritise UK citizens for the first 30 million doses of the not-yet-approved vaccine by September, reflecting roughly a third of its production capacity. The UK government paid USD 80 million for this. In addition, the US government recently announced it will pay AstraZeneca USD 1.2 billion to launch phase III-trials on this vaccine in the US, and increase the manufacturing capacity for it in the US.

#### From globalisation to localisation

Government in-fighting for vaccines can be seen as another push to more government involvement with companies in general, and for the healthcare sector in particular. Going forward we expect that most countries will force their local healthcare industry to increase or build from scratch local facilities for the production of essential protection materials, diagnostics, medicines and vaccines. This will lead to higher capex going forward for the healthcare industry and will also lead to substantial overcapacity worldwide.

The efficient global supply chain that was able to fulfil demand “just-in-time” is changing towards more local production that will be able to produce “just-in-case” local demand. As previously-mentioned, this pandemic is speeding up trends that were already present in society. Such increased government involvement in the healthcare sector fits with the “America first” policy from the

#### Reshoring

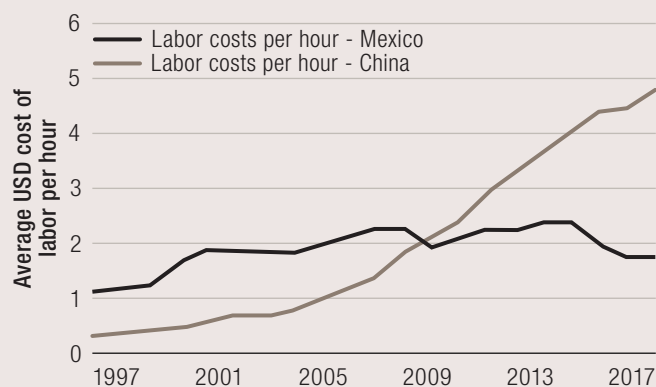
The move to globalisation with growing international trade and outsourcing of production started in the 1980s. It sped up in the 1990s after the fall of the Berlin Wall and the collapse of the Soviet-Union, but it really shifted to a higher gear after China entered the WTO in 2001. Due to the country’s large and cheap labour force that flocked to newly-built cities, China has managed to become the manufacturer of the world within roughly the last two decades. However, due to large wage inflation in China, labour costs deflation in the Western markets, and a demographically shrinking workforce in China, this cost advantage has narrowed substantially. For the US, for instance, the labour costs in neighbouring Mexico are today 50% cheaper than in China while they were 100% more expensive at the start of this century. These are just labour costs and exclude the lower transportation costs from producing in Mexico.

Next to the dwindling labour cost differences, the move towards more robot labour and automation also removes the production cost difference. The use of automation has increased in recent years to account for over 50% of the production process, especially in automotive and consumer electronics.

Other industries are following this secular automation trend. Fully automated warehouses for e-commerce and sterile robots that work in packed food factories are examples. Manufacturers can

now deploy self-learning collaborative robots or “co-bots” on supply lines for as little as USD60,000 a co-bot, and these machines are far more sophisticated than the automation that once dominated the factory floor. In addition, co-bots can work 24/7 and are designed to work next to and with humans. We therefore expect that reshoring production will lead to a large push in automation, as well, as these local production units will become smaller and will need to become more flexible by being able to craft different products at the same time.

FIG. 6 LABOUR COSTS: MEXICO VERSUS CHINA



Source: The Economist Intelligence Unit (EIU). Calculation based on data from China Statistical Yearbook and International Labour Organization (ILO) data on hours worked, as at 2018. This chart is for illustrative purposes only.

current US administration. The US is clearly not on its own in this move to localisation and away from globalisation. The Chinese desire to be fully self-supporting in thirty years' time is evident from president Xi Jinping's announcement of the China 2049 Initiative, which supports the strong localisation trend.

## Not the first time

COVID-19 has not been the first disruption to the global "just-in-time" supply chain. The 2010 floods in Thailand caused a nine month supply issue for magnetic hard disk drives (HDD) used in PCs and laptops, as about half of global output was taking place in the Bangkok area. Also, the great Tohoku earthquake and tsunami that hit Japan in 2011 led to enormous supply issues for the global car industry. Not only were Japanese car producers (OEMs) affected, US car companies also had problems finding automatic gearboxes for more than a year. Apparently over 80% of the worldwide supply of automatic gearboxes was concentrated around Fushushima.

After these natural disasters, some companies adjusted their supply chain to have regional coverage, which means a production facility in Europe for the EU, one in Mexico or US for North America, and a slimmed down version in Asia for the Asian market.<sup>10</sup> This meant more overcapacity for most companies involved and the first step away from "just-in-time" global supply to "just-in-case" regional or local supplies.

During a recent round of quarterly earnings releases, most healthcare companies mentioned that the repatriation of the supply chain is a key subject on their agendas. For instance, Thermo Fisher Scientific announced a doubling of their production facilities in the US on viral vectors to support increased demand for gene therapies and vaccines. The CEO of Philips publicly debated his own strategy to have centralised US production of Respiroics devices that support breathing. Apparently the Dutch government has asked if local production would be possible in the (near) future. TEVA pharmaceuticals management, on the other hand, was doubtful about moving its supply chain back to the US given the higher cost structure, and hinted at higher local inventory levels. Other drug companies have also indicated that stockpiling would be a more cost effective way to ensure adequate supplies than on-shoring production.

## Moving to primary care and prevention

For decades, the business model for most pharmaceutical companies has been to focus on US specialty care. In the US, there is no maximum price for treatments, and providing cures from diseases that needed to be treated at a hospital or specialty care centre was to aim at smaller volumes for higher prices. Think of rare or orphan diseases or the recent breakthrough in immune-oncology that brought expensive treatments against skin and lung cancer.

In other countries, most of the prices for medications and treatments are less expensive and are capped by regulation or government-controlled health insurance providers. Although the US government, through their Medicare and Medicaid programmes, is the largest buyer of medical services and products it is, strangely enough, not bargaining for discounts or installing price limits as is the case in the EU and the UK. Given the ever increasing pressure on government budgets, due to COVID-19, we expect that governments, including the US, will force healthcare to switch away from majority expensive specialty care and to move more budget towards less expensive primary care and prevention. Vaccines, DNA based screening and a healthy lifestyle are the key components for better prevention, while primary care will be most delivered by GPs (general practitioners), family doctors and ward nurses. For pharmaceutical companies this means they need to adjust their business model towards high volumes at lower prices.

## Friendly regulation to heightened innovation

Contrary to some world leaders, who seem to prefer the blame game, the global research community is more united than ever. COVID research and data is shared almost instantaneously and the normal 6-12 month process of publishing in A-journals is skipped by pre-publishing results. Several development steps that are normally performed sequentially are being performed simultaneously, despite potentially-complicating virus mutations. Rigorous regulatory and safety requirements are also being bypassed. New untested techniques are being evaluated as well to compress the vaccine-development schedule. The US Food and Drug Administration (FDA) and other regulators have started a fast-track approval process for many vaccines and antibody treatments that are currently being researched. In addition, governments are providing a large part of funding for COVID research, like the US's [Warp Speed project](#).

The flipside of this funding is, of course, the limited pricing these COVID cures and vaccines might offer. Next to limiting vaccine prices, in some countries politicians also started debating the nationalisation of research and production of vaccines, or no longer granting patents for vaccines. This threat is already well recognised by management of large vaccine producers. Johnson & Johnson, Sanofi and AstraZeneca promised to price their COVID vaccines, once approved, only slightly above break-even. Gilead's management has already promised to deliver the first 1.5 million doses of the not yet approved COVID-19 antibody cure Remdesivir for free to the US government. In addition, they stressed that they would be open and transparent about the future accessibility and pricing of this product, limiting the product's margins.

We expect some of this easier regulation-led innovation to remain after the COVID war is won. In particular, the DNA and diagnostics based segmentation that was used in similar fast approval of the

<sup>10</sup> Japanese eye-glass manufacturer Hoya is one example who went to regional production as their single source eye-glasses factory was floated in Bangkok.

latest breakthrough of immune oncology drugs will be used in more drug approval processes. This has the potential to lower the high cost of approvals, improve the likelihood of success and increase the speed to market. However it also gives more power to diagnostics companies and might limit future medicine pricing.

### **Changing business models**

It clear that with more government involvement, and changing regulations regarding the healthcare sector, the business model of healthcare companies will need to change. Pharmaceuticals and biotech companies will probably need to move away from the high price, low volumes model in their migration from specialty care to primary care and prevention. The hospital business model could become more regulated with capped returns as governments push to have higher spare capacity on ICUs and ERs. More forced local production capacity and higher inventories on key healthcare supplies and medicine will lead to higher capex and lower return on investments for the industry. The last few decades of increasing

margins for the healthcare industry due to M&A, increasing scale and efficiency through globalisation and focus on expensive specialty care seem to have ended. Perhaps future research on new treatments and medications might become cheaper, but this will not be enough to offset our peak margin outlook.

We expect the first corporate victims of the current pandemic to be in the biotech industry. From the large number of listed biotech companies that have no revenues today, 40% have insufficient cash to make it to the end of their trials. Faced with a pandemic, a global recession, and a locked credit market, we expect most of them to simply disappear, as we expect cash-rich pharmaceuticals to stay on the sidelines for now.

The healthcare industry will also have to deal with the introduction of digital networks. In the travel and taxi industry the arrival of digital networks like AirBnB and Uber has caused substantial disruption and deflation. This might happen as well in the healthcare industry with the arrival of Telemedicine networks, as this is the collateral catch for the fast forward move into the digital 21st century.

## 4. Changing consumption patterns

The press coverage about lock downs around the world has been substantial. Horror stories about corona casualties in abandoned elderly homes in Madrid or Seattle have been well covered. The same can be said about contaminated cruise ships that were harboured, locked and transformed into luxury corona prisons. Not only the horror stories, also the data will be hard to forget once COVID-19 is no longer among us. In Canada more than 80% of all COVID-19 victims were part of the group of people living in care or elderly home and representing less than 1% of the Canadian population.

As with other major crises we expect this pandemic to also have impact on human behaviour. Younger generations will feel empowered by the fact that their lifestyle lowers the carbon footprint, for instance, by eating less meat and travelling virtually. Driven by fear of the next pandemic, older generations will probably adjust their future consumption. More and more baby boomers will no longer feel safe in large crowds and will think twice about booking a cruise, visiting a concert or moving to an elderly home. Instead, having a luxury time at home, surrounded by family, seems to be the new destination for the baby boomer wealth.

### More corona victims: Travel and restaurants

We expect fear about the virus to fundamentally alter mass-tourism's business model for years to come. A recent survey of 4,500 people worldwide by Azurite Consulting confirms this.<sup>11</sup> Thirty-six percent of international flyers say they will not fly internationally again until a vaccine is available. Twenty-five percent of avid cruise goers say they'll never take a cruise again. And one-in-four Americans say they will wait for a vaccine before they spend another night in a hotel – for business or leisure.

Also it is hard to expect that business travels will return to normal now that Microsoft Teams and Zoom have become an essential part of our working lives. Or as Barclay's CEO Staley said recently: "There will be a long-term adjustment in how we think about our location and travel strategy...the notion of putting 7,000 people in a building or all of us flying around the world may be things of the past."

Eating out was once a convenience. Now it's a health risk. Reservation platform OpenTable expects that even after the pandemic has ended 25% of U.S. restaurants are not going to make it. Given the expectation that working from home will become the standard for 1-2 days per week, breakfast at home is staging a comeback. One might hope that people will not simply return to a life where they rush to get to work, 5 days a week, skip breakfast and grab a coffee and something to eat on the go. According to NPD Group, breakfast and coffee-to-go have been the only growing segments in restaurant sales in the US the last decade.

### Corona winners

Just as COVID-19 has pushed the healthcare sector into the digital age, it also accelerated several other digital consumption trends that were already growing rapidly for the last decade like the shift to:

1. e-Commerce
2. Working from home
3. On-demand food delivery
4. Gaming and esports over traditional sports viewing
5. Streaming media over traditional broadcasting

However, the most striking consumption effect seen since March 2020 has been the renewed growth of home improvement and home appliances. The most sold item in the US since the lock down according to both the online channel of Amazon and the offline channel via Bed Bath & Beyond has been bread-machines. Consolidated retail data shows that the most sold out categories in the same period has been security and protection, home improvement and home appliances.<sup>12</sup> Of course, it is logical that during a crisis and lock down consumption patterns change, however, we would argue that the renewed interest in having a comfortable time at home will be here to stay for a while. Combined with more permanent working from home, a next step might be an exodus away from city centres to the suburbs and nearby countryside with affordable residential zones.

<sup>11</sup> <https://www.traveldailynews.com/archive/tag/azurite-consulting>.

<sup>12</sup> [www.oberlo.com/blog/high-selling-products-during-coronavirus](http://www.oberlo.com/blog/high-selling-products-during-coronavirus).

Another potential winner of this pandemic is cycling. Cities around the world are hoping to take advantage of the lock down to usher in environmentally friendly mobility changes. They are aiming to lower transport emissions and kickstart a shift in how the public gets around – and at the same time, help those who are heading back to work and school keep up the physical distancing. Brussels has expanded the city's cycling network by sacrificing space for cars, and the city is calling on citizens to choose bicycles for short journeys and to avoid clogging up public transport. For the same

reason, in German cities temporary bike lanes were created, and citizens are already asking to make them permanent. London went one step further and announced plans to create a large car-free zone in its centre.

Will all these consumer changes be permanent or will we all be flying around the world again after we all have been vaccinated against COVID-19? We do not think so and on behalf of our planet we do not hope so. Health is clearly back on the agenda and seen by more and more as our only wealth.

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