LIVING IN THE DIGITAL FIRST WORLD

WILL MOORE'S LAW TAKE HOLD IN HEALTHCARE AND CREATE A NEW BREED OF BILLIONAIRE ENTREPRENEURS?

Inexorable growth in the cost of healthcare is one of the largest fiscal challenges facing governments around the world. Life expectancies have increased continuously in many countries. As examples, in the US, the UK, and Australia, life expectancies have increased at a rate of about 12 weeks every year for decades. This drives dramatic escalation in the length and cost of retirement, adding to the substantial budgetary and balance sheet pressures that already face nearly every developed nation.

In parallel, the sophistication, complexity, and cost of medical care continue to increase. This creates further financial pressure, not to mention invidious decisions as to whether new, life-saving but extremely expensive treatments should be made available to recipients of public healthcare. To exacerbate all this, there is little evidence that people are living healthier—many more people reach 80, 90, or 100 than ever before, but they don't necessarily have materially better health than their peers from decades ago.

The critical question is this: Is this vexatious double-helix of ageing populations and increasing healthcare expenses inescapable? If it is, then the next 20 years will see most governments face growing pressure to abandon fundamental elements of their welfare systems as free healthcare and traditional retirement ages become entirely unsustainable. These have become ingrained in the public consciousness as part of each citizen's fundamental rights, so cutting them will involve exceptional political risk. Indeed, the compromises involved are unthinkable to most in politics, which goes to explain why the can of tougher choices has been kicked down the road for decades, contributing to inexorable increases in national debt.

But what if this negative cycle could be broken? What if the combined forces of technology, big data analytics, and human ingenuity meant that a new paradigm emerged that led to improving health, reducing need for healthcare, and an emphasis on much lower-cost preventative measures rather than high-cost, long-term medical treatment and emergency interventions?

Moore's Law in medicine

Advances in technology have had a profound effect on costs in many industries. Moore's Law effects are best known in their application to computers, where they have resulted in dramatic reductions in the cost of processing and storage capacity over the long term. But these outcomes are not unique to the IT industry. Other examples are solar PV and battery storage systems, which have declined in cost over several decades.

With ongoing extensions to our knowledge of human physiology, and advances such as robotic surgery, 3D printing, and medical imaging, there is a real chance that Moore's Law effects could start to appear in healthcare. This would transform the cost-effectiveness of the industry. Similarly, there have also been dramatic improvements in our understanding of the effects of diet and exercise on human health over the past decade, and these will continue.

With this in mind, there is tremendous logic in governments supporting the advancement of medical science and instrumentation, while of course maintaining standards in relation to the approval of new medical treatments and technologies. Inventors, innovators, and entrepreneurs face enormous challenges, not least from the hugely powerful and exceptionally well-financed voices of the incumbents, whether in the healthcare industry or in the food sector. In particular, while the world has seen amazing advances in many industries over the past 100 years, it has also huge sums of money invested to protect the status quo, whether through advertising, legal action, or worse. Those fighting the status quo need support.

Healthcare analytics

The explosion in the application of advanced statistical analysis in decision-making has begun to transform a number of major industries. Often referred to as 'big data', the key to this really lies in the sophistication of the analysis rather than in the extent of data involved. In practice, extensive data exists in numerous countries in relation to the operation of their healthcare systems. If made accessible, this data will allow all sorts of critical insights to be drawn.

The use of healthcare analytics is almost certainly the biggest single lever that Western governments can pull to improve outcomes while reducing costs across their entire national budgets. This will require a sensitive touch as it will result in profound changes in the entire healthcare value chain. Meanwhile, there are of course enormously powerful interest groups that may be wary of developments of this type.

Governments will have a critical role to play in this area, as they are owners of some of the largest pools of data. By seeking out and using the most sophisticated healthcare analytics experts, they will improve healthcare outcomes and reduce costs for their own citizens. Simultaneously, they will also support the broader development of this critical industry, with knock-on benefits in the cost and effectiveness of private sector healthcare operators as well, creating further benefits for their economies. Ultimately this is all about unlocking the power of open data and systems in the healthcare sector, as already seen to great effect in fields such as transport (Uber) and accommodation (Airbnb).

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An enormous prize

Silicon Valley, and its various emulators around the world, have created extraordinary value by bringing a fresh perspective to traditional industries. This includes segments such as advertising, communications, and media, with energy and motor vehicles following closely behind. All of these were large industries, dominated by very profitable, long-established companies with 'impregnable' market positions. The innovators have created huge new businesses, often by offering a much more cost-effective solution to consumers, even if this may have reduced overall industry profitability, with incumbents suffering eye-watering losses or complete oblivion as a result.

The opportunity in healthcare is extraordinary. One of the world's largest industries operates with a business model that is fundamentally misaligned with the needs of its customers. Put simply, healthcare companies make much of their profits out of people who are sick. Permanent conditions that require long-term medication are typically much more profitable than illnesses that can be cured by a single course of treatment. A recent UK study showed that increasing exercise levels, even through walking more every day, had a meaningful impact on healthcare outcomes. Walking is free, and Silicon Valley is already onto this with apps and technology such as Fitbit.

From a consumer's perspective, it would be much more logical to pay a fee each month to the healthcare industry when you were well, and for that fee to be waived when you were sick, with the industry still required to treat you. The longer and healthier you lived, the more profitable the arrangement would be for those responsible for keeping you healthy. This would provide enormous incentive to invest in the most cost-effective mechanisms for keeping people well, rather than the opposite.

The revenue and profit pools involved are huge—healthcare spending is one of the largest budget items in most developed economies. The resistance from the incumbents will no doubt be extreme, but opposition of this nature is all too familiar to the latest breed of technology entrepreneurs.

Meanwhile, for governments, the only traditional solutions to the twin demographic challenges of retirement and healthcare costs are simple: force people to save more during their working lives (reducing their expenditure on everything else), force them to retire later (extending working lives and thus reducing retirement), or cut back the welfare state (and let them figure it out on their own). The global political Ponzi scheme of borrowing from future generations to pay for the needs of the present is not sustainable, as many countries are now discovering with debt reaching painful levels. As a result, my prediction is that changes will happen surprisingly rapidly in this field.

The conclusion for entrepreneurs, businesses, and governments is a simple one. If you focus too hard on the rear-view mirror, you won't see the opportunities that lie ahead. Others will seize them, creating more profitable companies, more efficient economies, and happier societies. As workers become steadily more mobile across international borders, the smarter, more imaginative, and more action-oriented people will congregate. Silicon Valley achieved this long ago, and there is already a massive concentration of medical technology businesses in the Bay Area. Wouldn't you want to live in the digital first world?