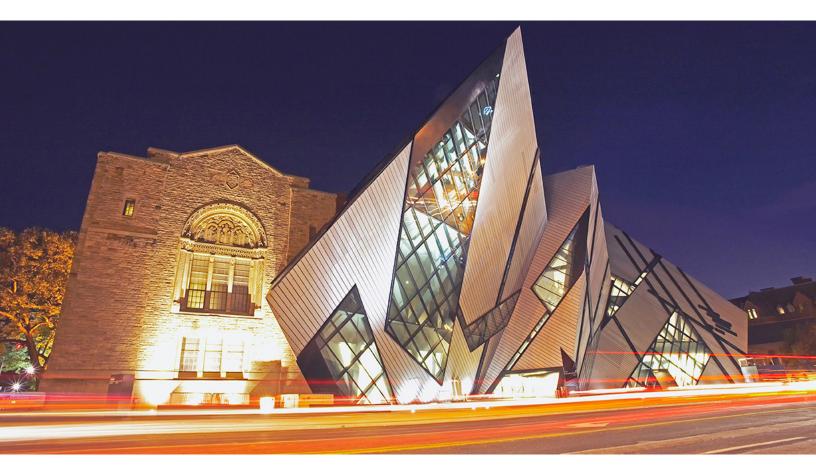
## McKinsey & Company

Strategy & Corporate Finance Practice

## Framing reinvention: What disruptive change means for business, society, and you

Global managing partner Kevin Sneader reflects on the challenges and opportunities that disruptive change presents for business leaders and society.



In this episode of the *Inside the Strategy Room* podcast, we share McKinsey global managing partner Kevin Sneader's recent address to a gathering of CFOs in London. (For more conversations on the strategy issues that matter, subscribe to the series on iTunes or Google Play.)

**Sean Brown:** From McKinsey's Strategy and Corporate Finance practice, I'm Sean Brown, and welcome to *Inside the Strategy Room*. Today's episode is an excerpt of a presentation that Kevin Sneader, our global managing partner, shared at the annual CFO Forum that we recently held in London.

The conference's theme was around reinventing the role of the CFO and how digital and analytics are helping drive this reinvention. Kevin's remarks focused on macro disruptions and the implications for business and society. He sets the stage with a historical perspective on the pace of disruptive technological change using the SS Savannah, one of the first hybrid sailing ships that augmented wind power with a steam engine, to highlight that while change is a constant, the pace of disruptive change has risen dramatically—and will continue to do so.

Here's Kevin.

Kevin Sneader: Good morning. It's lovely being back in London. I grew up in Glasgow, and it is always nice to see what the British summer looks like. Certainly this would be a glorious summer's day in Glasgow, so we shouldn't complain—we should be enjoying life. We should also understand that there's a lot going on in the world. My task this morning is at least to frame some of the context and give you a sense that this is a time of reinvention, not just evolution. I will try to substantiate why we believe that to be the case.

I grew up near the water, so I feel I should use the River Clyde and Scotland's shipbuilding industry to draw the analogy. But I know that there are quite a few Americans in the room, and so I thought I would start with the US.

The SS Savannah was a steamship. If you look really closely, you can see there is one chimney,

under the smokestack, right there in the middle of the vessel. It [the steam engine] only operated for about an hour on any given day—and in fact, less than that in aggregate—but it sailed from Glasgow to New York in 1818, in about 30 days, about a month. It was a major breakthrough: it was the first commercial steamship that could actually sail that distance.

Fifty years later, [if you're a shipwright] you are obviously worried about steam. But you are not doing an awful lot, because you have plenty of opportunity to keep going. There was no particular reason to evolve, at least if you were a shipbuilder: you didn't see that disruption as being all that material. But, of course, you were worried, and you wanted to make sure you could keep improving your technology in the face of disruption. And so you did this: the German response, the *Preussen*, in 1902.

Remember, the *Savannah* was in 1818. But again, why worry, because the *Preussen* crossed the Atlantic in about 26 days, so it sheared quite a bit of time off—another 10 percent off. It was competitive, but there was one problem—one quite significant problem—and it was this: the SS *Grampian*, built on the Clyde in 1907. The SS *Grampian* commercialized the technology. It could run under steam power, and it transformed trans-Atlantic shipping, and it could cross the Atlantic in somewhere between 20 and 22 days, carrying a full cargo—not just of coal, but actually of goods.

However, if you were a shipbuilder, you weren't prepared to give up just yet on the age of sail. You do this: the *Thomas W. Lawson*, also built in 1907 and the finest of the sailboats. It was quite a magnificent vessel, and it, too, had a problem—quite a major problem, with hindsight—which is that it was very hard to steer. And so, in 1907, the *Thomas W. Lawson* foundered near the Isles of Scilly and lost all hands except for the captain, George Dow, and an engineer. That was the end of the sail ship.

What is intriguing, of course, is that this all took place between 1818 and 1907. The disruption was there. And actually, it was quite revolutionary, but

it just took a long time. Our challenge is that we have a very different pace and scale of change, and we don't want to go building sailboats in the age of steam. What I want to do, therefore, is to frame the context in terms of a series of disruptions that is taking place and then talk more specifically about the technology of evolution—since digital and analytics are part of our theme—and how that is playing out, and what it is doing to the world in which we live.

I thought about reminding ourselves of the bigger context before we get to digital and analytics. We have two world powers. We have the rising world power in the form of China, which most analysts expect to be as big as or bigger than the US economy by 2030, in absolute terms, not relative terms. And we have the established power, of course, in the case of the United States. And we have the European Union and everyone else. Everyone else is trying to figure out what this world order will look like, and books have been written about this.

Secondly, let's not forget that all of you are dealing with companies that are facing great change in the form of the consumer. I will argue, however, that much of that change is rather like the sailboats: the wonderful thing about demographics is that you can see it coming. It should not be a surprise that we are in a world where the millennials this year will outnumber the baby boomers. I can see quite a few boomers in this room, but I do not see very many millennials. No offense—perhaps there are a few, and I just can't tell. There was at least one on the stage last night, and that millennial spoke a slightly different language to the rest of us. This is the reality of the world: this year, there will be more millennials than boomers in the United States.

The world as a whole will see some very interesting changes. There will be more people aged over 65 in China than there are citizens of the United States within the next ten years: about 400 million over the age of 65. That is greater than the population of the United States. Think about that—and think about China in that context. Again, the great thing about demographics is that you can see it coming. I'm sure

you've all seen it coming and are thinking accordingly, but this is part of the disruption that we see.

The environment: I know there is much debate about the environment, and I am going to assert that the debate is one that is interesting, but what is more important is what the rising cost of environmental damage is doing to the economics of business around the world. If you are on the West Coast of the United States, you are feeling the pain of rising insurance premiums if you are a business. Those insurance premiums are rising because we know that there will be wildfires, and we know that there will be twice as many wildfires this year as there were three years ago. The environment has moved from being something we, of course, care about as citizens of this planet. As business leaders, it is now a cost of doing business that is being seen right around the world—whether it is in the cost of energy supplies if you are in a country that has chosen to deviate from using nuclear versus coal or, indeed, in the cost of insurance premiums if you are dealing with catastrophic events.

Populism: You can dialogue around why this is happening and what the rise of populism means. One of the most interesting reports that McKinsey has published was called *Poorer than their parents*, and that had one striking statistic—it had many, but it had one that really caught the eye. It was a simple statistic that said that between 1995 and 2005, if you looked at the OECD [Organisation for Economic Co-operation and Development] and at the disposable income of households in the OECD, then 98 percent of those households saw incomes go up, while only 2 percent saw incomes go down. It was 98 percent up, 2 percent down: a pretty good number. The same statistic fast-forwarded ten years—from 2005 onward—looks rather different. That 98 percent going up became 30 percent, but that means that the 2 percent going down became 70 percent.

So we went from 2 percent of households seeing incomes go down to 70 percent of households. Incidentally that number was even larger in the United States and much smaller in Sweden. The

reality is, therefore, that they are poorer than their parents. Part of the world in which we live is premised on "tomorrow will be better than today," but for many households, tomorrow has not been better than today. That is a big disruption. And again, we could spend all day talking about why, wherefore, and whether we are sure about that number. Are there other numbers that point in the other direction? No.

The next disruption we are going to talk about is a revolution. Interestingly, it is a revolution not in terms of new technology—we often talk as if all this technology is new. It is a revolution in terms of the way in which that technology combines—the connectivity—which is far more important than the individual technologies themselves. Those technologies are creating real change, and they are doing so in a way that is similar to the change in the eras of various industrial revolutions—such as in the First Industrial Revolution, which none of us can remember, with steam power to modern production at the turn of the last century. Importantly between that revolution and the electric-power revolution, something big happened, which was a transition.

Again, if we were here in a different context, I would be arguing that the future is very bright in that there will be more jobs created than lost when we get all the way to the Fourth Industrial Revolution. But the problem is, what happens in between? What happened in between those two revolutions was war. There were many other things that went on, but there was conflict-real disruption-as people started to fear for their futures. "What happens to my job? I can see that there are going to be more jobs, but what are you going to do for me?" This is part of the environment in which we live. There are machines and modern production methods. Automated production: that one went peacefully, but there is no guarantee. With all this disruption, against those four other disruptions I talked about, you can see why the world is a tense place.

There is just one side note that I often state, because people ask me what is happening in the world in terms of how different countries see this. I was with one Chinese bureaucrat who reminded me that if you look at each of the three revolutions before we got to the current one, China lost every single one of those revolutions. They know that. And so the one sentence that rang in my head was when he said to me, "Don't forget, we're not going to lose this one." Again, that talks to the world in which we live.

Four industrial revolutions: together, a series of disruptions that I think add up to fundamental change. Today we will be talking about technology. Digital analytics is one of the technologies that is playing a material role and changing the role of the CFO—to the point at which we argue for reinvention rather than adaptation. There are many different technology shifts. Let me just jog through them briefly and size them, because I think it is important:

- Digitization is arguably the largest in economic value, which is why we will be spending much of our time on that. Who knows what the real value is? We have put out a number of \$10 trillion, and there is a whole McKinsey Global Institute report behind that number. But it is a big number, and it is a fundamental number.
- Automation and robotics could be bigger. Much
  of that change is happening in parts far away
  from this country, sadly. It's the automation of
  production that is really driving fundamental
  change. You can see that about a quarter of the
  world's robots are in Shenzhen, China.
- IOT [the Internet of Things]—part of the joining up of existing technologies. It is a lesser number but still hugely important.
- Quantum computing—a vast opportunity to really crack the code on, let's say, cancer and many of the other ills that have plagued society—could be worth an awful lot, still to come. So let's see where it ends up.

For all of this, however, the subject of today—the one that is priceless, to use the advertising term—is the impact on people, culture, and jobs. And this is

where you come in. This is what we will largely talk about this morning.

Gosh, there's lots of change, but just remember this when you are sitting in front of a spreadsheet, wondering how to invest: it will never be this slow again. The pace of change will never be this slow again. That is the world in which we live, and change will get faster, not slower. As you contemplate what is happening, just remember that thought.

That is why we argue that it is time to reinvent. We have done lots of surveys, and we actually repeat these surveys every couple of years. Before we do that, however, it is worth remembering what happened in the S&P, which is that the average tenure has gone from 67 years to 15 years, and it keeps going down. Just because you are successful today is no guarantor of success in the future. Companies risk being disrupted themselves—let alone individuals within companies.

What does it take to reinvent? Who are the reinventors? These are some of the characteristics. These are companies that choose to invest more in digital. They are more likely to be using some of the technologies in their core business model rather than in demonstration projects off to the side. One of the great places to say you've joined the digital arms race is to point to a division that is off in the corner, doing something really interesting, rather than to the heart of the business—and reinvention is about the heart of the business. That is why [reinventors] are two-and-a-half times more likely to have done something fundamental to the core operation of the company. That is what reinvention means.

This is also true, but it is not for the fainthearted: We undertook surveys in 2012, 2014, 2016, and 2018, and we asked people in our global survey of respondents, "Have your digital investments improved performance, yes or no? How do you feel about them?" Unfortunately, many people say no. And that, in a way, is part of the conversation that I am sure we will have in our breakout. For all that I can paint this happy picture of reinvention, there is

an awful lot of money being spent and invested but is not yet paying back. I recognize that challenge, and I want to come to that at the end of my talk.

Before then, I will also talk of what I think improves the odds of success. This is where I would ask you to reflect on where you are, as leaders, and how you feel. I will talk through five actions:

- 1. First and foremost, there is that leadership that understands what is going on—which, I guess, is why you are all here today.
- 2. Secondly, there is the ability to reskill and upskill the labor force. Labor forces now are taking on very many different tasks. I work in consumer goods and retail in particular. And obviously, the proposition in retail in terms of what people on the shop floor do today is dramatically different from what they did five years ago. In that context, how you reskill and upskill becomes part of the conversation.
- 3. How do you take your digital operations, or your daily operations, and truly digitize them?
- 4. Second to last, how do you work together in ways that are very different from the ways leadership teams work today? The evolution in the way we work is as important as what we actually do.
- 5. Last—but by no means least for leaders—is to communicate a vision. In the face of lots of data that will come in, let's say, "Just keep adding a few more sails to the ship—that's all we need to do, and we don't really need to reinvent. With a few more sails, we will make that turn nicely."

So five practices—let's quickly jog through those with a few examples. I have tried to borrow examples from the world of a CFO. DBS Bank is the bank in Singapore, which many of you may know, that I think is widely seen as a leader in banking. What is interesting there is that they actually went out of their way to develop a new way of measuring what success looks like. They

measured a full set of digital P&L [profit-and-loss] metrics to try to understand the return they were getting on their digital investments, with an eye to maximizing that return over time. You can see that they have been able to draw up an effective business plan to drive digital behavior among customers. DBS Bank, I think, managed to make the transition, with some pretty savvy leadership along the way.

Reskilling and upskilling: Why are these complicated? If you are just doing the ROI [return on investment], it depends where in the world you are, because clearly labor laws will come into play. But as one CEO put it to me, from a country with relatively loose labor laws, it is easier to take out a 40-something workforce and just go and hire a 20-something workforce because they are more adaptable. They are more likely to be savvy. The problem is that many labor laws would stop you doing that and, even if you did do that, with the disruption in terms of expertise and experience, I am not so sure that the math works. How you reskill therefore becomes a big part of this conversation, and we are certainly seeing that in the work that we do.

We see some companies that have made this move. I will give two examples of that. One is from Tata Steel, where they used data analytics to really take an existing manufacturing facility in Holland and transform its production levels by applying data tools to really understand and monitor the process in ways they had not been able to do before. They did that by training their workforce to use that information. The information had been available, but actually, the ability of the workforce to make use of it was the obstacle. They therefore created the Advanced Analytics Academy within Tata Steel. And that academy has been the place where employees have been reskilled to make the most of the digital tools and capabilities that are now available. The results have been quite impressive.

In another example—and I think the difference between success and failure gives you some sense of the scale of change—we looked at Johnson & Johnson and one of their medical-device plants in Ireland. In that medical-device facility, where they literally created the seeds of mobile techniques to monitor plant production times, you can see very significant improvements in efficiency, done through taking and applying readily available technology but really bringing the labor force along. That is what has been common between what Tata Steel did and what Johnson & Johnson did.

Why does that matter? Because bringing the labor force along is part of culture change, which I think is perhaps the hardest part of this conversation. If you look at what the real barriers are to meeting the kind of digital goals that companies set, these include the lack of understanding of trends, the lack of talent, the lack of infrastructure, the lack of internal alignment, business process, and lack of senior support. This is what we got when we surveyed and talked to senior executives.

Interestingly when we really step back, the number-one barrier, and perhaps this is a catchall, is culture—and behavior. Culture and behavior: What goes into the culture, and why would that be? It is some of the series of behaviors that I talked about. I talked about the availability of information perhaps being a part of it, but nevertheless, the way the established way of doing things mitigates against change gets in the way of reinvention.

How do you work in new ways, in the face of all of that? Again, I have gone to Asia to look at a couple of examples. One example is Haier, formerly known as GE Appliances. I expect many of you have a GE appliance of some form in your house. GE Appliances was bought by Haier in 2016. Actually, it was a poorly performing subsidiary at the time. What is interesting is that the way that Haier is organized is not the traditional lines and simplicity that we have all come to know. They have taken their 80,000-person workforce, and they have organized them into about 2,000 units, each of which has a P&L. Those 2,000 units organize around individual products instead of traditional functions. The product has everything within it that is needed to succeed, but they have some shared services.

It is interesting that they took over a business that was in either flat or declining performance, and Haier today—or last year—grew about 13 percent in its white-goods business, which is quite remarkable, given what is going on in that industry. They have done that in part through some of the technology innovations, where you have connected dishwashers and all sorts of interesting equipment they have brought out. They would argue that part of it is due to this structural change, created to free up a lot of energy and allow the business to operate much more effectively than it did under prior ownership. There has been a pretty significant step change in performance.

Lastly, all of us—all of you—have a role to play in communicating change. It is very easy for me to assert that, but it is important to understand that one of the things—and we disaggregate what makes for success in the context I have just described, in that environment of real and radical change—is that it matters what you communicate. Do you have a compelling change story? CEOs who do seem to have much more success. Obviously, we have made judgments as to what a compelling story looks like, but the change is quite significant, provided it is aligned to tangible signs of activity on the part of senior leaders. It is even more important to align, and that there is communication that is transparent about what change will happen-and when it will happen-and that the information really can be understood and absorbed. The power of effective communication cannot be underestimated.

As an example of this, I wanted to use pizza, because I know this is something we all know and love. I know you all love Domino's Pizza, but I thought some of the reviews were a little harsh. "Domino's taste like cardboard. Microwave pizza is far superior." That was the environment in which they embarked on change. The CEO—Patrick Doyle—came in and led that business between 2010 and 2018. He obviously set about upgrading the product, but what is really interesting is that they effectively became leaders in the space of some of what they were doing on the digital side. Part of what they sought to do was to upgrade the

product but also to upgrade the way in which the product was accessed and the extent to which employees could be digitally trained. That has been one of the highest and best-performing stocks in the US, and it has a significant chunk of enterprise value that has been created at about \$11.5 billion. Importantly, they have actually got to a place where two-thirds of their sales are digitally enabled. This is a very different business than it was in the "age of cardboard."

There are a few things there to think about as the day proceeds:

- One, who are the digitally savvy leaders that you have in your organization? Is that you, or is it somebody else?
- Two, how do you make sure that you make the long-term investments? It would be very tempting just to keep adding sails to the ship, but when do you need to take the engine out and replace it? That is the real question.
- How do you incorporate the tools that allow you
  to do things at scale? I touched on some of the
  manufacturing facilities of Johnson & Johnson
  and Tata Steel where they have done that. What
  does that do for your budgeting approaches? Will
  they be flexible enough? And will they withstand
  the changes if you ever do hire and have that
  many P&L units within your entity?
- Lastly, how are you communicating? What is the role that you are playing, vis-à-vis the CEO and the rest of the executive-leadership team, to communicate some of what is going on?

I had one thought, which I will close with, which is that we can always look back and say, "Look, everything you said would happen in the next few years didn't happen." Because we tend to overstate what will happen in the next couple of years. However, I expect that if you look back at what has happened in the last decade, the scale of change has been dramatic. That is why I think Mr. Gates was right when he said that we tend to overestimate the change that will occur in the next

two years, and I would add that we dramatically underestimate the scale of what will happen in the next decade.

I don't know if we have a decade. I feel much more confident now in saying that, given that the pace of change will never be this slow again, the next five years will be the replacement for the ten years, and that rather than two years, perhaps it is 18 months. However, the direction of travel is clear. And of course, the art of success for any CFO is, how do you weigh that all up and translate it into the investments and the other decisions that need to be made if you are going to reinvent and win in this era of disruption?

**Sean Brown:** At the end of the session, Kevin responded to several questions from attendees. The first was about China and its demographics, particularly about its aging population.

Kevin Sneader: There is so much bound up in demographics everywhere but particularly in China. One aspect of it is the Chinese working population. The flip side of the 400 million people over the age of 65 is, of course, that there are fewer people in the working population, because, if you are China, your one-child policy is coming home to roost. Although they relaxed the one-child policy some time ago, many families are still only having one child—the country has actually been unable to increase the demographics.

I work with a company that makes baby products, and when the news came that they were relaxing restrictions on the benefits associated with having a second child, my client became hugely excited and shipped tons of product in—and it is still in the warehouse, because they haven't actually started to have more kids. The implication of all of that is that the China working population over the next ten to 15 years will be reversed, and it will start to decline.

Here's the thing: China is automating faster than the rest of the world. If you contrast China

with India: every month in India, one million new people enter the workforce—one million. India has to find jobs for one million new people every month or risk social unrest and all that goes with that. I really hope India can find those jobs. China has the opposite problem. They will see their workforce decline—and actually materially decline by about 10 percent and 15 percent—as of 2035, at the same time as the world is automating. Some would say that you either get rich or get lucky—or, in China, you can get both. Their policy will actually play out at a time when they actually may need less labor, and they are shifting rapidly away from labor-based competitiveness.

From an economic perspective, they might just pull it off, in terms of the demographics of their labor force and how that plays through. Of course, for the West, we have long had labor forces that are stable or declining, and it is one of the reasons why labor costs in China are going up dramatically and outpacing the rate of growth in the economy—because of the shortage of labor that is really beginning to bite. That is one consequence.

What is actually more interesting is attitudinal. If you think about the leadership of China today, they literally were working in the fields during the Cultural Revolution. As you all know, President Xi was sent to the fields with his family, and they remember that. They remember that, and it is deep. It is in the psyche, and they don't want to go back to that. It explains some of their behavior. They also remember tales from their ancestors of when China ruled the world, and it is part of this notion, "We're not going to lose *this* cultural revolution." It explains, I think, some of the bravado you sometimes see in the way in which the leadership behaves.

If, by contrast, you are a Chinese citizen who is the age of many of us in this room, in their 40s and 50s, you weren't in the fields. But your parents were, and so you save for a rainy day. You remember, and you behave accordingly. It is one of the reasons why the savings rate in China just will not budge.

Does anyone know what the savings rate in the US is? It is 5 or 6 or 7 percent. The savings rate in China: does anyone have that number? It is not 30 percent, not 50 percent—how about 67 percent? They save 67 cents in every dollar, a staggering number. That is why, when we talk about Chinese debt, we should remember that we are not talking about personal debt, and we are certainly not talking about mortgages, because they don't do that. We are talking about institutional debt for corporations—state-owned enterprises actually.

How that all changed is very intriguing, because it's not going to change in my generation. Literally, my colleagues—my partners in our China office when I chat to them about their childhood, they remember not having meat, and they remember how the cheat was to go and buy a piece of fat. They remember all of that, and they are not going to change. The real issue is, what will the next generation do? How will that change China? Will that attitude make things very different? Is that what will bring about what I think many people thought would happen, which is, how can you possibly continue to essentially control this country? Also, with 1.4 billion people, why would they put up with that? And attitudinally, why are they accepting it? Perhaps that is part of this whole transition that could occur, in that the 18- to 30-year-old generation becomes the numerical majority. But this will take a long time.

There are many consequences around the demographics. They are very practical in terms of the economy and the growth rate, but much more interesting is what will happen to behavior and attitude. That is something we don't know, and it is too early to tell. We just don't know. That group is certainly spending more, and it seems less likely to save. They travel more, so it could be that we see very different attitudinal changes coming through, but that is a guess.

**Sean Brown:** Kevin was then asked what his biggest worry was in terms of the societal impact of the disruptions he discussed.

Kevin Sneader: Growing up in Glasgow, you learn to be an optimist! Okay, that was a joke. The biggest worry is what I touched on. I passionately believe—and we have done a great deal of work to show this—that there will be a lot of jobs created in this industrial revolution, a lot of jobs created. Publishing is a good example. If you think about the publishing industry, it has been wiped out in the sense of the traditional publishers—the print media and so on have had a nightmare. On the other hand, there is a great deal more publishing taking place, and many people are making an income from it. Net—net, it's been great.

The issue isn't the future but the path to that future and the disruption that will take place. I worry greatly about the dislocation that is occurring for 40-somethings, because they are the group who will really bear the brunt of this change. They are the ones where the economics of reskilling would be very questionable. Frankly, it is questionable, because people think it is harder to reskill somebody who hits that age and that it is just not worth it. They are not very flexible, and they like their old ways of working. When societies have that problem occurring, nasty things happen. That group is very noisy and very influential—they are the decision-making group in many ways.

There are very real consequences, because that group has the power to do things. And over time, in the past, many of these transitions have not gone so smoothly. They just have not gone very smoothly. I am not saying that they led to the First World War, because there were many things that came together, but they certainly were factors. The unemployment rates and the Depression in the 1930s certainly did not help the instability of the world at that time. We are entering very choppy water. You can see that in the type of leaders, and the way in which the rhetoric is being ramped up. and the appeals to the instincts of a group that is feeling under threat. They know—in survey after survey—that they are vulnerable, and they are vulnerable. So that is my biggest worry.

As a business leader, if I take it right down to the corporate level, I see an awful lot of sails being added to ships. There are many people who just keep improving what they have, or they do a demonstration project off to the side. But they don't really go and look at the core processes of the business and think really hard about how the supply chain will have to operate differently in a world that is geopolitically divided and technology enabled—and when sourcing products starts to become possible in very different ways. I worry a great deal about that as a business leader. Are we doing enough to make the transition, or are we just adding a few more sails to the ship? At some point, the ship will not turn, because the core of the business is the issue and not the challenges. That is an interesting thought, and as a business leader, I worry a good deal about that.

I worry for the world, and I worry for the business leader. If I want to be optimistic, can I just give the optimistic view from the other side of the tracks for one minute? Read Hans Rosling's book [Factfulness: Ten Reasons We're Wrong about the World—and Why Things Are Better Than You Think, Flatiron Books, 2018]. The reality is that more people are out of poverty in the world. There are 1.2 billion people who have been lifted out of poverty—largely in India and largely in China but in other parts of the world as well. There are fewer people dying through armed conflict than in the history of humankind, for all that I said about the disruptions that are taking place. Life is being lived longer everywhere—everywhere—and that is a huge step forward, so there are also grounds for optimism.

**Sean Brown:** The final question was about the impact of environmental change on businesses. Kevin was asked for his thoughts on what businesses can to do to help address sustainability and climate change.

**Kevin Sneader:** The reason I talked about the cost is because I think much of what we have talked about in various aspects of the environmental

dialogue have been about the damage to the planet in a very theoretical way. Is it 1.5 degrees or 2.0 degrees at which global warming really takes on a whole new characteristic that we should worry even more deeply than we do already? It has been a very high-level dialogue around nuclear power—yes or no—and how we think about the way in which we operate, but now I think we can start to quantify, at very practical levels, the cost of what is going on.

We did some work a decade ago on carbon cost curves that was good theoretical work and served the politicians, because it talked about the cost at a very high level to an economy of making the transitions—and, therefore, who should do what and when. However, it didn't land the point at the level of individual businesses. What we are about to publish is that we are going to show why individual businesses are already experiencing the cost-basis change and why that cost will now become a very real part of their business economics. Even if you no longer accept the high-level call to action, you now have a very important and tangible cost in your operating decisions.

We will also argue—and this is where we will get back into the land of high politics or high debate—that capitalism, our system, was premised on a stable environment. If you actually go back thousands of years and think about migration, migration happened in the past because of climate change. People started moving around. Well, imagine what will happen to the world as temperatures start rising. Already, in parts of India, you have temperatures of 40 degrees plus. How do you do business and live a life in those kinds of environments? People have done so for a long time, but the temperatures keep going up.

You can start to see migration already occurring in Africa due to water shortages, and there are some of the challenges in Southern Europe. But what if that became the norm, and our capitalist system—which is all about stability and economic freedoms—then suddenly has labor forces moving all over the place? Then the world looks very, very

different, so we are also going to make the high argument. What I am actually much more interested in is that, for the first time, we will really tangibly show the cost of the impact of water shortages, the cost of the impact of forest fires and other forms of environmental disaster, plus, of course, all the usual stuff around plastic and so on.

It is a very different economic argument. I think it is cost based, and I think it is an attempt to try to shift

the dialogue. We now realize that we are already facing the cost of what is going on and, therefore, business has to do more—even if it is just on the basis of self-interest, rather than thinking about the global effect.

That was on a happy note, wasn't it? I think I have played up to my national heritage! Thank you very much.

**Sean Brown** is McKinsey's global director of communications for strategy and corporate finance and is based in the Boston office; **Kevin Sneader** is McKinsey's global managing partner and is based in the Hong Kong office.

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