

A Discussion with Alec Ross, Author of *The Industries of the Future*

Boyden's *Leadership Series* presents discussions with business and thought leaders from organizations across the globe. The series focuses on topical issues that offer executives, political leaders and the media insight into current trends in business and talent management in the global marketplace.

This issue features Alec Ross, author of the *New York Times* Number One Best Seller *The Industries of the Future* and Distinguished Visiting Fellow at Johns Hopkins University. In the interview, Ross discusses a variety of topics including themes from his bestselling book; qualities of exceptional leaders; conditions that have accelerated and hindered economic growth, both in the United States and abroad; and the future of hiring in an increasingly data-driven world.



Alec Ross

For the BOYDEN VIEW on the opportunities and challenges facing the executives of the future, continue to page 8.

Ross's *The Industries of the Future* explores the technological and economic trends and developments that will shape the next 10 years, from cybersecurity and big data to the commercialization of genomics to the code-ification of money, markets and trust. Since its publication in February 2016, it has gone into a 6th printing and the rights have been sold for translation into 15 languages.

Ross also serves as an advisor to investors, corporations and government leaders, helping them understand the implications of macro factors emerging at the intersection of geopolitics, markets and increasingly disruptive network technologies.

He served for four years as Senior Advisor for Innovation to former US Secretary of State Hillary Clinton, a role created for him by Clinton to maximize the potential of technology and innovation in service of America's diplomatic goals. In this role, Ross acted as the diplomatic lead on a range of issues including cybersecurity, internet freedom, disaster response, and the use of network technologies in conflict zones.

Previously, Ross served as the Convener for the Technology, Media & Telecommunications Policy Committee on

President Barack Obama's 2008 presidential campaign, and was a member of the Obama-Biden Presidential Transition Team.

In 2000, he and three colleagues co-founded a technology-focused social enterprise and grew it from modest origins in a basement into a global organization serving millions of low-income people, with programs on four continents.

Recent recognitions include being named to Foreign Policy's Top 100 Global Thinkers and receiving the US Department of State Distinguished Honor Award and Oxford University Internet & Society Award. Ross started his career as a sixth grade teacher in inner-city Baltimore through Teach for America.

Boyden: Your book, *The Industries of the Future*, has been incredibly successful. It has received numerous awards. It was a *New York Times* number one bestseller. You've received recognition from Eric Schmidt, Reid Hoffman, Arianna Huffington and others. To what do you attribute the book's phenomenal success?

Ross: There were really two key factors. Reason one, people have long wanted to understand topics they know are relevant to their future, from artificial intelligence to

A Discussion with Alec Ross *(con't)*

big data to genomics and beyond; but too often, books written on these topics are so technical that they are inaccessible or horribly boring. I thought people would appreciate a book on scientific and technological topics if written in an accessible, entertaining way, and this proved to be true.

Reason two, people responded well to the connectivity between the various different issues discussed in the book. Rather than asking readers to pick up a separate book about each of the topics the book covers – genomics, artificial intelligence, cybersecurity, geopolitics and the geoeconomics of future markets – this book ties them all together.

Boyden: Your book outlines China and India's exponential growth and ability to capitalize on globalization. Have the US and Europe been less competitive in recent years, or is it just a matter of these rapidly developing nations "catching up" to the west?

Ross: The US has had a very good track record over the last 25 years in terms of innovation and wealth creation. A lot of India and China's rise is in part because American company leadership has chosen to invest there.

Europe, on the other hand, we should consider in segments because the countries within it have not all performed the same way. For example, the UK has been substantially more active than Mediterranean Europe, and Northern Europe has been more active than Southern Europe. There are broad swaths of Europe that have not successfully pivoted from an industrial economy to an information-based economy.

I see a lot of complacency when I visit certain foreign capitals and I think the high rate of youth unemployment throughout much of Europe can be attributed to certain countries' failure to adapt to the degree that they need to.

The US is home to many of the innovations and companies where the future is being created. But that's considerably less the case in most of Europe, certainly in Southern Europe.

Boyden: You've talked about how "closed" societies lose out on investment from some of the more progressive sources such as private equity and venture capital. Are there any other opportunities that closed societies such as those in the Middle East or some parts of the American South miss out on? What's the real price they're paying?

Ross: People. They lose their best people. Let's talk about the South and my home state of West Virginia. States and societies that are more closed and not as rights-respecting as other societies are going to be places where a lot of the most talented young people flee. This is true both in the United States and elsewhere.

There are reasons Massachusetts, New York and California are home to the industries of the future while other states are not. For example, if you look at the impact of anti-gay measures in North Carolina and Mississippi, what we've seen are companies like PayPal and others completely changing their plans to open facilities there. North Carolina is obviously a hub of lots of technology investment, but there is also a set of cultural factors that hold it back.

A Discussion with Alec Ross *(con't)*

There is a common culture internationally among today's class of innovators. Whether you're in Tel Aviv or San Francisco or Berlin, there are a set of common attributes that this group of company founders hold, particularly those in their 20s and 30s. It is a different set of values than older generations and these young leaders are simply not going to base their companies in places that do not share their values.

Consider San Francisco: The city has the highest rents and one of the highest-cost workforces in the US. Their engineers are notoriously mercenary, moving from employer to employer – and yet, people continue to move across the country and start their companies there. Why is that? Cultural factors will keep that 28-year old CEO whose bank account is newly engorged with venture capital from moving his or her company to a place that has a closed society.

Again, I'm from West Virginia, and the state is not going to attract knowledge-based industries unless it makes certain pivots culturally. Being rights-respecting of women and minorities of all types is at the core of that.

Boyden: Why do you think that lack of diversity still persists in major US corporations despite extensive efforts to combat it? Is it simply that not enough time has passed to turn over a new generation of diverse leaders or is there something else at play?

Ross: One of the biggest factors is that companies must change their workforce policies to accommodate what women want in the workplace, whether that's more flexible hours or some of the other

policy changes that advocates such as Anne-Marie Slaughter have catalogued. We lose women in their late 20s and through their 30s in part because the workforce policies in most US corporations actually penalize you for being a mother.

The recognition that some shifts have to be made in corporate policy so that women are not losing 10 or 12 years of promotions is a relatively recent revelation. It's still very early in terms of making the kind of changes to more fully recognize and develop the potential of female executives.

Simultaneously, more technology and media companies are being run by people with technical backgrounds, while fewer women are going into technological fields. Until we see a shift in demographics of women in STEM, women will be at a structural disadvantage.

Boyden: Norway and some other European countries have mandated quotas for women board members. Many women don't like these quotas, because they cast doubt on their merit. Do you agree, or do you believe quotas are an effective driver of progress?

Ross: Quotas do have the potential to diminish those in the group that they are intended to help. These measures often raise questions of whether an individual really belongs there – both externally and to the individual herself. That said, if there is evidence of a persistent problem, I would be open to the possibility of quotas.

In Indonesia, policymakers have set a mandatory minimum for the percentage of women who hold cabinet positions in the national government, and it's clear in this case that quotas have been a good thing.

A Discussion with Alec Ross *(con't)*

My instinct is to push back against the idea of quotas, but I do acknowledge that there are some examples where they have had a positive effect.

Boyden: What makes a great leader?

Ross: There is no single formula for a great leader. Great leaders and great leadership teams can be as diverse as what makes a great athlete. What sport are you playing? What position? Being a great leader is very similar. There are a variety of different types of leadership that are best suited to a moment, to an industry, to a stage of a business' growth. However, there are a few attributes that cut across all of these.

First – and this may seem obvious, but it is remarkable the degree to which it is still a problem – is that a leader must be able to articulate a company's vision and the underlying strategy that supports that vision. If an individual is incapable of explaining his vision in a way that people immediately understand, he or she cannot be a great leader.

Second, a leader must be a great listener. He or she must be able to take in enormous amounts of information and synthesize it. A CEO who can run a company with large numbers of employees has to be astute, assimilate lots of information, connect the dots and draw meaning from them.

Third, a great leader understands that a company never arrives at its destination. Many of the best examples of leadership come from people inside what are already strong companies. They recognize that you can't just continue doing the same thing you've been doing for years. Where many great companies become good companies,

good companies become mediocre companies, and mediocre companies become poorly-performing companies is when a leader is unwilling to make difficult shifts to ensure the company can keep up with the tide of change.

Boyden: Are there any people you feel are paving the way for how leadership will look in the future?

Ross: I can provide one well-known example and a handful of those lesser-known.

One of the single best corporate turnarounds in the last five years was made by a trio at Facebook: Mark Zuckerberg, Sheryl Sandberg, and Chris Cox. This team recognized the changing nature of how people were communicating and accessing information, and they pivoted Facebook from a desktop web platform to a mobile-first platform with unbelievable speed and focus.

Contrast this with other companies, some of which are smaller than Facebook, who failed to make this pivot. They faced tens if not hundreds of billions of dollars of loss in shareholder value. What Zuckerberg, Sandberg and Cox did at Facebook, in combination with the acquisition of WhatsApp, I say earned them their fame.

For lesser-known examples of great leadership, we're beginning to see early evidence of great millennial leaders. There may be some really special people in this generation. The first example I'll point to is Jeremy Johnson. He's 31 years old, started and sold his first company while he was still an undergrad at Princeton. His second company went public, and he founded his third company at age 30.

A Discussion with Alec Ross *(con't)*

I mention him not just because he's so young and already working on his third company. Part of what makes him great is that he seized on two things: first, the field of education, which is increasingly relevant, and second, he's building a business in which the majority of the workforce is based in Sub-Saharan Africa, Nigeria and Kenya specifically. The kind of vision and execution Johnson has had in what is now his third venture at the ripe old age of 31 is mind-blowing.

The second example is Scott Crouch. He's CEO of a company called Mark43, and he stands out to me as one of the great millennial leaders to watch, in part because he's taken fields that haven't changed in decades and thought about how they can be made more efficient and effective. Mark43 is basically reinventing law enforcement through data analytics.

The third example is Sheel Tyle, who has been both an entrepreneur and an investor. He is now co-head of the seed fund at NEA [New Enterprise Associates], which is the world's largest venture capital firm by assets under management. He graduated from Stanford at 19 years old.

The reason he is emerging as a breakthrough millennial leader is that he views the 196-country chessboard in the same way as people who really engaged heavily in China 15 years ago. Tyle is figuring out how to take risk capital, deploy it in frontier markets and, over the next 10 or 15 years, help create fortunes – plural – by understanding how the geopolitics and geo-economics of this 196-country world are going to work.

Entrepreneurs who are building businesses that solve big, hairy problems and bringing new efficiency and effectiveness – that's what interests me most. These three stand out to me as names we may not all have heard of, but who I think exemplify traits of tomorrow's leaders.

Boyden: In *The Industries of the Future*, you talk about data being the raw material of the information age. How do you see that playing out in terms of what companies will look for in the future, and how that will change our approach to education?

Ross: One of the safest jobs you can ever have is as a data scientist. There is a hunger for experts in data analytics and data science that cannot be satisfied by today's market. I think this will be the case for a number of years to come because the outputs of our education system simply do not meet market demand.

If you are a CXO [C-level executive] and don't have a data analytics strategy, you are in danger. And if you think that your business won't be disrupted by analytics, you're wrong.

Take the taxi industry. If you owned a taxi company, you probably never would have guessed that data analytics and digital technology was going to have anything to do with your field, a field that was rooted in customers calling a telephone number and a driver showing up in a car and taking you somewhere. This is an industry that hasn't changed for 100 years and was likely not going to change. Lo and behold, a 30-year-old in California eats the industry up with software and Uber is born.

A Discussion with Alec Ross *(con't)*

The founders of Uber did not know anything about the transportation industry. What they did understand was how to build technology platforms with really smart analytics. We will begin to see the “Uberization” of many more industries in the coming years. Airbnb in the hospitality industry is another example. Industries will either reform or get left behind. At the heart of this is an aptitude for data analytics.

Boyden: How do you see big data changing the talent landscape within the healthcare industry in particular?

Ross: Historically, life sciences and information technology have spun in different orbits. The big “businesses of the future” in healthcare will be those that understand how to bring the two together. Commercialization of genomics is interesting in that it requires domain expertise both in pure life science or medical science as well as in computer science.

Whether great companies will come from entrepreneurs who are rooted in computer science or the life sciences is still up for debate. Senior executives will need to build a workforce that blends domain expertise from both.

Boyden: You’ve said that emotional intelligence and communication will continue to be essential for industries in the future. How should companies prepare, and what should students or managers seek in terms of training and education?

Ross: It starts with recruitment. Today we bring in talent through a variety of different tests. We test aptitude across a variety of different functions, but communication skills and emotional

intelligence often are not among them. People may have become infatuated with the Google model of hiring. While Google’s highly quantitative approach applied well to engineering workforces and to their company specifically, we’ve begun to place too much emphasis on technical skills and not enough on skills relating to the humanities.

In terms of training and development, it’s never been more important to focus on communication skills. As more of our work becomes rooted in zeros and ones, it’s never been more important for us to develop our most human capabilities, those rooted in contextual thinking and being able to do behavioral diagnostics that computers can’t do for us.

One of the most interesting contradictions of the rise of a world made more algorithmic is that what we need is to emphasize the development of our most human attributes. If I go to an executive search firm looking for a CXO, I don’t want to hear about somebody’s software program. I’m taking for granted that you’ve got some software program that will produce a big pool of candidates. I am, instead, relying on your ability to intuit what I am telling you, and have the emotional intelligence to figure out what it is I really need.

As the quantitative aspects become more prevalent in healthcare, in many respects the glue that holds the industry together – and distinguishes great leaders in the space – is the human element. To that end, communication skills can be developed, and in certain cases taught. A poor communicator can become a good communicator.

A Discussion with Alec Ross *(con't)*

Emotional intelligence, on the other hand, cannot be taught completely. In recruiting, hiring managers must look from the outset for people who are natural communicators or who have strong emotional intelligence.

Boyden: What advice would you give our clients in preparing for the workplace of the future? What's the real message here for CEOs?

Ross: The headline is "it's not the strongest who survive or the most intelligent, but those most adaptable to change." What is your willingness to make hard choices that take your business in different directions, given the pace and the fury of change?

Boyden: What's been your own approach to hiring? What do you look for personally when you hire people?

Ross: The number one thing I test for is passion. Somebody can tick all the boxes, but if they aren't passionate about the work, they're not going to meet my expectations. I would rather hire someone with slightly less measurable aptitude, but who deeply believes in the vision and mission of the organization. I can help develop a person, but I can't teach someone to care.

Another thing I look for is broad-mindedness. One question I ask in every interview is "what do you read?" I don't care what that is – my wife reads People magazine. I am simply interested in the range of content people are choosing to take in, for recreation, for work, for both. When people cite a Thomas Piketty book on the future of capital or recite the last five books from the *Financial Times* business book section I know they're

either telling me what I want to hear or their range of interests is narrow. Getting a sense of people's information diet and media diet tells me a lot about them.

Boyden: You've had an amazing career. Do you have any regrets or can you point to any missed opportunities?

Ross: I don't regret the chances I've taken, but I have regretted a few of those I didn't take. I spent eight years, from ages 28 to 36, at a company I co-founded and for which I stewarded growth over the tenure of my time there. It was a great eight years, but in retrospect, I should have stopped after five. I should have been more expeditionary in my career at that point.

Where I have regrets is where I grew too comfortable and derived a steady and positive return in my professional life rather than pursuing something audacious.

The views and opinions expressed here do not necessarily represent the views of Boyden; only those of Mr. Ross.

For insights on opportunities and challenges that will be faced by "executives of the future," please continue to the Boyden View section on page 8.

THE BOYDEN VIEW: The Executives of the Future



Alicia Hasell

Alicia Hasell is a Managing Partner of Boyden Houston

Boyden: What industry stands out as being particularly well-positioned for the future?

Hasell: Industries that are more technology-dependent or cutting edge have an advantage as “industries of the future.” It’s not just that they’re better positioned, but more likely that the talent they hire and cultivate is, by nature, more inquisitive about “what might be” and less constrained by any perceived limitations.

Boyden: What functions are more prepared and which are more resistant to change?

Hasell: Typically, human resources and IT functions are naturally adaptive and receptive to changing dynamics. Operations and finance, which are typically more structured due to compliance and process requirements, will generally face more challenges to evolve. Our clients are seeking executives who can access creative solutions and not maintain the status quo.

Boyden: Alec Ross believes diversification is the key for future boards. Is there a “tipping point” or key moment that companies need to experience in order to commit to diversification?

Hasell: There may not be a tipping point per se, but the point of recognition is different for each company, and that often depends on its “vintage.” Newer companies are more likely to bake diversity into their practices, which makes them easily positioned for the optimal future structure.

Boyden: If social media and the growth of peoples’ networks can speed political movements, one can assume the same applies to corporations. How should execs of the future harness this?

Hasell: Our clients are telling us they want innovative, forward thinkers who are passionate about building from scratch, while leaving their own mark. The days of a precise position profile and a resume that fits perfectly are gone.

It is more about recruiting the best talent and allowing him or her to serve as a utility player, who as a senior executive has great flexibility and perseverance. It is the new normal that executives are embracing, since the benefits of improved profits and lower turnover far exceed the cost of resisting change.

Boyden: You work frequently in the broader energy market. Compared to other sectors, how do energy companies, and their executives in particular, need to evolve to be positioned for the next generation?

Hasell: The cyclical nature of the energy industry creates significant entrepreneurial opportunities as well as resourceful, resilient, independent managers who are not afraid to take risks. However, the industry also loses a great deal of strong human capital in every cycle. Freshly graduated engineers who enter the job market in a negative cycle take their skills to other industries.

This creates a talent gap for managerial positions that shows up many years later. It’s a challenging issue for the industry, and the answer may lie in greater operator-service company collaboration.

In the end, partnering with businesses that have global reach will be key to gaining a competitive advantage for the future. The mergers and acquisitions currently underway are not just about consolidation, but largely driven by the need to extend companies’ reach.