



2018 | The New
China Economy

Summary Report

October 2018



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 Lim Chow Kiat
 Chief Executive
 Officer, GIC



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About GIC Insights 2018

GIC Insights is an annual forum that gathers a select group of senior global business leaders each year to discuss the long-term issues pertinent to the international business and investment community. This year, and fittingly as GIC celebrates 20 years in China, our theme was **The New China Economy**.

Why the New China Economy

There is no better time to re-evaluate the state of affairs of the Chinese economy. China is undergoing a major economic transition from investment-and export-led growth to a model driven more by consumption and services, with structural reforms a key part of this process. In 2017, China's economy grew 6.9%, above the government target of 6.5%, despite a notable decline in fixed investment growth contribution, tighter monetary policy, new financial regulations, and a stronger monitoring of fiscal and banking risks. In addition, with strong governmental support for the technology industry, China's new generation of entrepreneurs are creating world-class products, developing their own technologies, and rolling out new business models with scale and speed. Its growing influence presents new opportunities and implications for global investors.

At GIC Insights 2018, we were fortunate to be able to hear views from esteemed panelists on the longer term outlook for China's new growth model, the prospects for China as a major global innovation and technology player, and the role global investors can play in this. Our guests, all distinguished in their respective fields, added to the quality of the discussion with their thoughtful questions and comments.

The sharing was rich, and we present an extract of the key takeaways from the sessions.

We hope you will find the perspectives presented in this publication helpful.

CEO Address

Lim Chow Kiat, Chief Executive Officer, GIC



Welcome to GIC Insights 2018.

Into its third year, GIC Insights convenes our most valued partners across asset classes, sectors and geographies to engage with us, connect with one another, and share perspectives. The sharing of ideas is all the more important in an investment environment where the global recovery is ageing, asset valuations are high, and uncertainty is elevated and climbing.

We held GIC Insights in Beijing this year for two key reasons:

First, 2018 marks 20 years in China for GIC. In 1998, having invested in China for years and seeing opportunities arising from the Asian Financial Crisis, we decided to set up our ground presence. Subsequently, in 2007, we set up a second China office in Shanghai as we expanded our activities. Today, China accounts for a significant portion of our Asia exposure. We expect to see China featuring more in global investment portfolios, as more of her markets open up.

Second, we wanted to focus on the developments in China, on both its economy and technological innovation. China's economy is important to all investors. It is already 16% of world GDP (on market exchange rate basis), and accounts for about a third of world GDP growth. Many of our portfolio holdings are directly affected by what happens in China. Technological innovation is also of critical interest. In just a few years, China has rapidly developed an entire new ecosystem of technology-enabled businesses and industries.

Let me expand more fully on these economic and technological implications.

i. China's economy

On China's economy, even as she marks 40 years of reform and opening up (改革开放), there are significant challenges. Internally, China will need to reduce the credit excesses built up since

the Global Financial Crisis and contain the potential property market bubble. Progress has been made, but problems remain large, especially in ensuring that growth is not derailed. Externally, the ongoing tension with the US appears to have moved past posturing and into long-term geopolitical competition. Beyond geopolitical uncertainty, challenges include the ongoing shift of its economic composition from investment to consumption, improving corporate governance, controlling pollution and further reducing poverty. Any one of these is no easy task for such a large, diverse economy that is also ageing rapidly.

Our approach has been to stay invested in China. History has shown that China leaders have met all sorts of challenges before, and each time, they have faced up to them, analysed them carefully, and found ways to deal with them. Over the long term, a basket of the top companies in China would also be worth more than they are today. By staying invested through cycles, we have a better chance than most at identifying what those companies are or will be. We also see positive effects of change in China. As China transitions to a 'new era' of economic development, their needs and aspirations will continue to evolve. This will drive growth in many sectors such as consumer goods, healthcare, education, financial services, and technology.

Financial sector reforms and opening up of the capital markets represent an attractive window to merge the best practices of China with the rest of the world. A globally-connected Chinese market would be a powerful source to take growth to the next level, even as China exports more capital to the world. China's anti-corruption campaign and reforms will also be a key driver in improving corporate governance, capital efficiencies and shareholder alignment

ii. Technology and disruption

Meanwhile, technology disruption continues to rapidly change businesses, industries and societies. This has been an area of focus for GIC for some years now, and the China of today is very much about technology.

Here are some of our observations:

- First, we are fast reaching a point where every company is a technology company. Rather than traditional classifications, we need to look deeper into the actual technological capabilities of each company. We have found traditional companies with such capabilities, but trading at "old economy" valuations. These are good investments we want to keep looking for.
- Second, true business moats are getting fewer. Today these are found in "ecosystem" businesses, where cross-selling, rich data, high customer switching costs and scale reinforce one another. This creates a powerful network effect, producing high and sustainable returns on capital, much like an "investor surplus".
- Third, some of our best investments have not been first movers, but fast followers and good executors. Often, it is not the technology invention, but providing goods and services at scale, with the right quality and a low enough price point for consumers, that matters. Businesses succeed on whether they deliver customer value - better, faster, cheaper.
- Fourth, and as China has shown, emerging markets have become major hubs for innovation and technology adoption. This is due to a greater openness to experiment,

less mature industries and fewer legacy arrangements. Technological disruption can be even more powerful in these economies, as there are more unmet and undiscovered needs and hence, more leap-frogging opportunities. Here, we focus on China, who is leading the global frontier in many areas including smart technology, drones, e-commerce, and mobile payments.

- Finally, while technology can do a lot of good, the pervasiveness, speed of change, concentration of power and degree of intimacy can also make the downsides more severe. From privacy issues to cyber theft to fake news to addiction, the list goes on. With more advancement comes even more risks, some unknown yet today. All parties will need to make responsible choices.

Taking a long-term view

A long-term orientation towards China does not mean blind faith or rigid position. There are challenges and risks associated with the broad themes that could knock us off our trajectory. Hence, it is important to examine the issues closely and from different perspectives. This is what GIC Insights 2018 had set out to achieve.

We were pleased to have very distinguished speakers share with us their insights on these broad themes. They include Dr. Zhou Xiaochuan, Dr. Yin Yong, Ray Dalio, Ng Kok Song, Joseph Tsai and Yuri Milner - all legends in their respective fields and long-time friends of GIC. We also curated a special showcase of exciting technology companies, which you will find in this report, who shared with us the

frontier work they are doing in their respective industries, giving us information and food for thought, as we assess their wider implications.

GIC has benefitted from being part of China's reform story over the decades, and we hope to share them with you through this publication.

China's New Growth Model

Outlook and Impact

China's efforts to create a more inclusive economy that gives greater play to market forces and more sustainable growth will involve a delicate balance of implementing reforms and maintaining demand and financial stability. The essay below presents an extract of the key points around the longer-term outlook for China, resolving the risks in the financial system, and China's relationship with the rest of the world, from an esteemed panel including China Society for Finance and Banking President **Dr. Zhou Xiaochuan**, Bridgewater Associates Founder, Co-Chairman and Co-Chief Investment Officer **Ray Dalio**, Vice Mayor of Beijing Municipal Government **Dr. Yin Yong**, Avanda Investment Management Founding Partner and Chairman **Ng Kok Song**, and GIC Group Chief Investment Officer **Dr. Jeffrey Jaensubhakij**.



A Giant's Rebalancing - China's New Growth Model

The China of today juggles multiple transitions — a rebalancing of growth drivers away from external-led demand towards domestic-led demand, a tilt away from investment towards domestic consumption, and a shift away from manufacturing towards services. At the same time, it is managing a deleveraging process, following a period of rapid excess credit growth.

Across all these inter-related transitions, the Chinese government has allowed market forces to play a greater role, which is crucial for sustainable reforms. In the important case of State-Owned Enterprise (SOE) reform, we have already seen much progress, with a number of SOEs having already undergone corporatisation and a transition towards mixed ownership.

Despite multiple transitions and evolving external and internal conditions, China remains highly attractive as an investment destination, especially in the long term. It boasts a record of strong and stable growth, political stability unmatched by most countries, and an industrious population. It has also, on numerous occasions, demonstrated its inherent strengths, such as the ability to manage different types of crises, its long-term orientation, and the aspirations and determination of its 1.38-billion population.

Keeping debt under control

This does not mean that the path ahead is smooth. Debt servicing costs currently account for 15% of China's GDP, and will continue to pose issues for Chinese leaders going forward. The good news is that the decisive actions taken by the Chinese government have already stabilised the growth in the debt-to-GDP ratio. The predictions by "collapse theorists" - who generally stress uncontrollable debt levels - remain unfounded. China is unique from most countries dealing with high debt, in that it is an economy with a significant savings surplus. An important characteristic of leverage in China, which distinguishes it from its peers, is that the bulk of debt is denominated in their own currency. This gives them greater room for policy offsets in case of stress.

35%

Percentage of global GDP the Emerging Asia economic bloc – which China will be a driving force of and is projected to grow at twice the pace of the rest of the world – is expected to fuel in a decade's time

Nonetheless, China must apply its strengths to resolve its debt issues. Debt levels of local governments remain under-reported, as their presence in holding entities has sometimes led to it being mis-reported as corporate debt. While this is not an ominous sign in principle, especially if the debt incurred was for investments in education, healthcare, and insurance, the Chinese authorities need to do more to foster greater investor confidence. Education, healthcare, and insurance are all factors that support China's transition to a market-orientated, service-driven economy, but the opening of China's bond market will only achieve its full potential if buyers have confidence to place their capital in the market, with similar confidence that they will be able to draw them out later.

Ultimately, the criticism around China's ability to restructure its debt and capital markets will not stop its march towards becoming the driving force behind the emerging Asian Economic bloc - which is projected to grow at twice the pace of the rest of the world. In a decade's time, this singular bloc can be expected to fuel 35% of global GDP.

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Urbanisation: A key driver of China's growth

In China, investor confidence relates strongly to the republic's huge potential for growth, with urbanisation being a key factor. As at 2015, only 56% of China's massive population was registered in urban areas. As more of its people migrate into second- and third-tier cities, so will its future growth potential. An example of its business friendliness is Beijing, where new business registration processes have reduced to under five days, down from an average of 23 before.

Going global in an uncertain world

The big uncertainty surrounding China's trajectory is geopolitics. This is partly a response to the rapid emergence of China and its competitiveness in key industries such as technology and

artificial intelligence. The bipartisan consensus that is emerging in Washington suggests that the ongoing, escalating tension in US-China relations could be prolonged. More broadly, populism has been on the rise both in the US and globally, leading to greater protectionism and nationalism, which could lead to adverse effects on political stability and investor confidence.

To its credit, China has continued to engage beyond its borders. The Belt and Road Initiative (BRI), with its goal of improving infrastructure and increasing connectivity across the Eurasian continent and beyond, is one example. China is attempting to forge new relationships between trading partners and participants of the BRI. Connectivity remains a core part of the initiative. BRI may be driven by China, but its success requires the participation and support of other countries.



BRI may be driven by China, but its success requires the participation and support of other countries.

What it means for the global community

Overall, two immediate investment implications arise from the above observations.

First, the sheer size of China and the prospect of its capital markets opening further mean that it remains a key investment destination in the long run, despite ongoing geopolitical tensions. The world will become more invested in China over time.

Second, while the Chinese economy is expected to grow in dominance over time, a transition away from the dollar as the global reserve currency is still not imminent, as it is a slow process. Nonetheless, the current short squeeze on the US dollar due to the growth in US-dollar debt and the large fiscal deficits is likely to put downward pressure on the dollar over the medium term.

China as a Tech-Enabled Economy and Global Innovator



China's focus on building an ecosystem to support entrepreneurship and technology, including investment, talent, policy support and market environment, has made it one of the world's leading centres of innovation and technological development. Below is a reflection of the success factors and how China's innovation and technology space will continue to evolve in the coming years. These are based on notes from a fireside chat with Alibaba Group Executive Vice Chairman **Joseph Tsai**, DST Global Founder **Yuri Milner**, and GIC Chief Investment Officer for Private Equity **Choo Yong Cheen**.

China as a Tech-Enabled Economy and Global Innovator

China's focus on building an ecosystem to support entrepreneurship and technology - supported by its investment, abundance of talent, state support, and market environment - has seen it become a global leader of technology and innovation. Indeed, its rise since the "reform and opening up" of 1978 has been nothing short of meteoric, with the effects being particularly pronounced in recent years, as Chinese innovation continues to evolve.

Today, to invest in China, one must be well-versed in technology, and understand its associated opportunities and risks. China's Internet ecosystem and global market share will continue to grow, and this will have far-reaching implications.

Achieving innovation superpower status

Innovation is today at the core of China's developmental agenda, as both the state and enterprise are aligned in their goal of making the country an innovation superpower. Chinese companies have shown that they have no intention of settling for being second best. Indeed, several Chinese companies have already established themselves as innovation pioneers, and as a country the Chinese are at the frontiers of Artificial Intelligence (AI), e-commerce, and mobile payments. To take AI as an example, China recognised early on that AI and machines that are able to mimic and learn human intelligence will be game-changers, and has laid out a developmental agenda to become a global leader in this arena by 2030.

Globally, many governments, including China, have tried to replicate the Silicon Valley model and ecosystem, but to achieve that, one must have a mix of both an angel investor ecosystem and individual success stories. In China, successful technology companies such as Alibaba and Tencent have helped the country's push to create a strong ecosystem. They also inspire and spur the creation and evolution of new companies.

A growth potential unmatched by others

While Chinese companies are increasingly global in their mindsets, some markets, such as the US consumer areas, have become harder to capture. However, enterprise opportunities remain, and Chinese firms have traditionally shown a willingness to pursue them. On the flip side, China's population continues to offer huge growth potential domestically. In the past decade alone, China has captured 25% of the global internet ecosystem, and is poised to continue leading the global market in the next decade, alongside the US.

China's domestic market also continues to offer significant growth potential. E-commerce, for example, has only achieved 20% market penetration today, presenting huge avenues for growth. To capture these opportunities, Alibaba, which currently runs the world's biggest e-commerce website, has broadened its commerce strategy to also expand into physical retail, entertainment, and services, beyond e-commerce, with the goal of penetrating the remaining 80%.

The road ahead: Some challenges

The competition for talent will be a defining factor for China's innovation ambitions. While Chinese universities have produced an abundance of talent over the years, China will need to overcome competition from the US, which remains an enormous draw and attraction for talent due to its success as a technology superpower. China will also need to nurture and retain the right talent. Skillsets required to succeed in an AI-centric future go beyond the conventionally touted fields of sciences, math and engineering, and into the realm of capturing the quintessence of human intelligence.

As Chinese companies grow in scale, they will find themselves under greater scrutiny from the state and regulators, especially if their businesses create negative externalities. Despite the scrutiny many large technology companies face from regulators, breaking them up is not the ideal solution, as the current group of companies has, for the most part, grown organically and not by consolidation. Society has also benefitted from these companies due to the natural network effects

they have created. Transparency, as well as constant dialogue with regulators to address and allay concerns around potential social or environmental issues, will be necessary. The internet sector, for one, has always been highly regulated, and businesses will have to demonstrate that beyond profit-making, they are making positive contributions to broader society at large.

A last crucial challenge for leading technology firms is to successfully make the transition from a founder-led company to a professionally-managed organisation.

Conclusion

In the coming years, China's internet ecosystem and global presence will continue to grow with far-reaching implications. China continues to play catch-up to the US in a few technological areas, but its progress has been rapid, facilitated by supportive government policy, size and scale advantages, and a pro-innovation environment.

Technology Showcase

Six of the most exciting and up-and-coming technology companies, covering a range of industries – healthcare, pharmaceutical, logistics, electric vehicles, construction and retail – took us through their business strategy and outlook. This section presents some key points from their presentations.*



1

CAI
NIAO 菜鸟

Robert Liu
Chief Financial Officer

2

基石药业
CSTONE
PHARMACEUTICALS

Dr. Frank Jiang
CEO

3

HAPPY LIFE TECH

Gong Rujing
Chairwoman & Co-Founder

4

NIO

Li Bin
Chairman & CEO

5

trax

Joel Bar-El
CEO

*Notes from Katerra's presentation are not available.

Cainiao Network

Established in 2013, Cainiao Network is dedicated to meeting the current and future logistics demands of China's online and mobile commerce sector. It operates a logistics data platform that leverages the capacity and capabilities of logistics partners to fulfil transactions between merchants and consumers at a large scale. It also uses data insights and technology to improve efficiency across the logistics value chain.



Robert Liu
Chief Financial Officer, Cainiao Network



Key Takeaways

- Established in 2013, Cainiao is an Alibaba business dedicated to meeting the current and future logistics demands of China, also the world's largest logistics market.
- Cainiao's solutions rely on rich data and smart algorithms and Cainiao is digitalising every element of the logistics sector. In 2017, Cainiao's logistics data platform enabled the delivery of nearly 70 million parcels a day.

Summary

China is the world's largest logistics market and has exceeded 110 million parcel deliveries every day in 2017. The needs of customers, merchants, and partners are evolving and Cainiao provides the market with an intelligent and revolutionary logistics brand.

Cainiao, established in 2013, is a business of Alibaba Group that is dedicated to meeting the current and future logistics demands of China. It provides a logistics data platform and smart logistics network that aims to achieve a 24-hour delivery time anywhere in China, and a 72-hour delivery time anywhere globally.

Despite its unassuming name – Cainiao stands for “rookie” in English – Cainiao adopts advanced technology and operates at the forefront of logistics. Its primary role is to facilitate efficient delivery of goods ordered on Alibaba's marketplaces. In 2017, Cainiao's logistics data platform enabled the delivery of nearly 70 million parcels a day.

Cainiao's solutions rely on rich data and algorithms that provide multiple benefits, including populating time-saving routes, ensuring rapid deliveries, and identifying warehouses closest to the customer.

In many ways, Cainiao is digitalising every element of the logistics sector. For example, e-shipping labels have replaced handwritten labels, which are helping to reduce errors. AI technology also is used to support warehousing and delivery. Today, it continues to seek to use more advanced technology to improve efficiency, such as through automation.

Cainiao is also building public infrastructure and facilities, and has created a shared warehouse network. This includes seven regional hubs and 10 million squared metres of warehouses in operation. Its global mindset has also seen it roll out six E-hubs around the world, with the aim of building logistics infrastructure that would support inclusive global trade.

Even as it grows, sustainability remains a key consideration for the company. Cainiao leverages innovation to support green initiatives, such as green energy vehicles, e-shipping labels, tape-free boxes, and package recycling bins.

Cainiao is committed to more investment in technology and data platforms, including hiring talented people and helping partners.

It is open to investing in other high-potential logistics partners.



CStone Pharmaceuticals

CStone Pharmaceuticals is a clinical-stage biopharmaceutical company focused on the development of innovative oncology drugs, with a strong emphasis on immuno-oncology-based combination therapies. In this session, Dr. Frank Jiang discussed the rapid development of CStone since its inception and the business opportunities that have arisen from the Chinese government's push for innovative drugs.



Dr. Frank Jiang

Chief Executive Officer, CStone Pharmaceuticals

Key Takeaways

- The Chinese oncology market has tremendous potential, being already the second-largest pharmaceutical market globally, but there are still significant unmet medical needs due to a lack of innovative drugs.
- Equipped with unique value propositions, CStone was founded with the vision of addressing China's unmet medical needs.

Summary

CStone's vision is to become globally recognised as the leading Chinese biopharmaceutical company and play a role in meeting China's critical unmet medical needs. Its focus is on developing innovative oncology drugs for China's top cancers, such as lung, gastric, oesophageal, and liver cancer.

Since its founding more than two years ago, CStone has made rapid progress in developing a rich oncology pipeline – it has 14 assets, four of which are late-stage assets at or near registrational trials including two world-class assets for the Greater China markets. It is the only Chinese biopharmaceutical company with three immuno-oncology products at the clinical stage today. CStone is also rapidly developing end-to-end commercial and manufacturing capabilities.

CStone's large scale of pipeline assets and backbone assets enable the company to succeed in oncology and immuno-oncology

combination therapy, which can significantly improve both survival and response rates.

CStone benefits from considerable support from the Chinese government. CStone's PD-L1 has been listed in the "National Significant New Drug Innovation Programme", which allows it to move more quickly through the approval process. This asset's development period is significantly short compared to industry averages across the different stages, from the Investigational New Drug (IND) review to First Patient First Dose (FPFD) registrational trials.

Investment Lessons

- In China, companies that focus on addressing the critical unmet medical needs of Chinese patients benefit from government policy support and regulatory reform.
- Companies that focus on self-driven innovation in China will be able to capitalise on the government's push for innovation, which is central to China's 13th Five-Year Plan for 2016-2020.



Happy Life Tech

Happy Life Tech represents the future of medical research and services, harmonising heterogeneous data with medical standards using natural language processing and machine learning technology.



Gong Rujing
Chairwoman & Co-Founder, Happy Life Tech



Key Takeaways

- Founded in 2013, Happy Life Tech aims to improve the quality of life through data intelligence and green healthcare.
- It envisions a future of a healthcare system that is driven by data science and AI, and where partners can see improvements by adopting Happy Life Tech infrastructure.

Summary

Happy Life Tech was founded to improve the quality of life through the use of data intelligence and green healthcare. Today, only 5% of the world population are up to World Health Organisation (WHO) standards and diseases remain a major challenge.

Happy Life Tech envisions a future of a healthcare system driven by data science and AI. It aims to create a safer, better, and more accessible healthcare system.

Happy Life Tech solutions provide numerous benefits such as building a traceable and regulated medical platform; the integration and processing of large amounts of medical data; enabling off-site clinics to improve efficiency; real-time monitoring of changes in conditions; full life cycle data for patients, and complements the Chinese Government's Healthy China strategy.

The company set up in China for a few reasons: First, given the importance of data to its product, China's population provides a significant and necessary sample size to help refine its algorithms. Second, the Chinese healthcare IP market today remains very

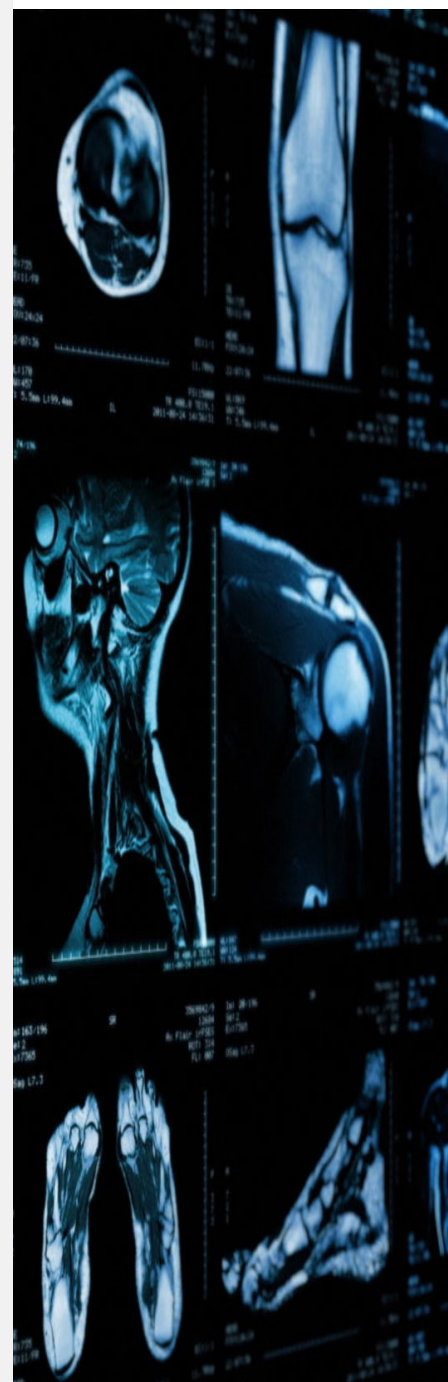
fragmented – which in itself, presents an opportunity to build a unified healthcare infrastructure. Its use, however, is not limited to China – individuals and partners from all around the world can also benefit from adopting its platform.

When Happy Life Tech was founded, the decision was taken to start by primarily focusing on the top, largest hospitals. Today, as the company has grown, it works closely and in tandem with Chinese regulators, medical universities, and top scientists and physicians from around the world.

Today, many scenarios can be developed with AI technology, and by using Happy Life Tech infrastructure, partners can see improvements to their situations.

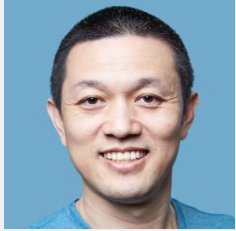
As with most AI-driven technology, data security and data privacy continue to be important challenges to address. Happy Life Tech works closely with the regulators on this.

The company believes that AI will ultimately not replace jobs, but instead enable people to work more efficiently to achieve similar outcomes and standards of living.



NIO

The future is smart, electronic and autonomous vehicles, and NIO is leading the way. NIO is a pioneer in China's premium electric vehicle market and recently listed on the NYSE after just four years in operation.



Li Bin

Founder, Chairman & Chief Executive Officer, NIO

Key Takeaways

- The automotive industry is on the cusp of profound change.
- NIO is a pioneer in China's premium electric vehicle market and is perhaps the automotive company with the fastest journey from founding to going public.
- NIO boasts the first intelligent in-car AI system, NOMI, and wants to redefine what premium service means for a car company.

Summary

The automotive industry is on the cusp of profound change. In the past, cars gave people the freedom of mobility. In the future, cars will go one step further and free people from driving, giving them the freedom of time.

NIO's belief is that products and technology are not the only things that must change; what requires change is how people use these products, which affects their entire ownership experience. NIO wants users to feel positive again about owning a car.

NIO's Chinese name, which translates to "Blue Sky Coming" originated from NIO's vision of a future filled with blue skies. Its mission is to shape a joyful lifestyle by offering premium smart electric vehicles and being the best user enterprise.

NIO is perhaps the automotive company with one of the fastest journeys from its founding to going public, having recently listed on the NYSE after only four years in operation. In many ways, NIO is a pioneer in China's

premium electric vehicle market. It designs, jointly manufactures, and sells smart and connected premium electric vehicles, driving innovations in next generation technologies in connectivity, autonomous driving and AI. It also boasts the first intelligent in-car AI system and one of the world's fastest electric vehicles.

NIO has been a global company since the outset and has brought together automotive and technology leaders from across the world, and established a global network of offices in China, Europe, and the US.

NIO recognises that supply chain is a real challenge in the automotive industry and invests heavily in this area.

NIO wants to redefine what premium service means for a car company. It launched NIO House as a space for its users and friends to mingle with one another and in so doing, build a more active community. NIO Power provides the world's first power service system of its kind (with a single click), and convenient 24-hour support services.

NIO is committed to a more eco-friendly future where improved smart electric car technologies and a better car ownership experience, drive increased adoption of smart electric cars and subsequently contribute to a more sustainable future for the planet.

NIO is forward-thinking, and looks beyond short-term P&L. It places a huge focus on R&D investment and on building the brand. Today, 40% of staff are involved in R&D, and new innovations continue to be in the company's pipeline.



Trax

Trax captures retail today, so you can see the opportunities of tomorrow. In this session, we heard from Joel Bar-El about how digitising the retail industry, for manufacturers, retailers and soon, consumers, is disrupting a 3-trillion-dollar business and transforming the shopping experience.



Joel Bar-El
Chief Executive Officer, Trax

Key Takeaways

- Trax's core business is in turning shelf images into real-time actionable insights. The value created directly increases revenues.
- Trax's state-of-the-art image recognition capability underlies a number of product offerings.
- Today, Trax works with 80% of the world's manufacturers and operates in 50 countries.

Summary

Trax products provide one of the most powerful and accurate ways for CPG manufacturers and retailers to collect, measure and analyse the activity on their physical shelves. They utilise advanced Computer Vision technology with a 96% level of accuracy when it comes to identifying products.

By taking a neutral position on the data and presenting itself as a scientific measurement tool, Trax has been able to avoid conflicts of interest and service the majority of the world's manufacturers, and even competitors.

Trax's Retail Execution solution is today a market-leading, in-store execution SaaS-based solution. It enables manufacturers to deliver on the following three pillars of value:

(1) Audit compliance of retailers: Although nearly \$100 billion is spent annually by manufacturers on specifying shelf position, until now, there has been no means of

auditing compliance on this.

(2) Competition: Trax's solution allows for instantaneous monitoring of competitors, including shelf space, packaging, promotions and product times. Customers can receive competitive intelligence on every competitor on the floor.

(3) Ensuring compliance of sales force: Manufacturers now have a means of measuring the number of sales and efficacy of the salesforce, even enabling managers to ensure sales representatives visited the retail store. This allows for the translation of incentives into results via the effective setting of remuneration.

Trax has expanded beyond its original product offering into other product areas, such as through a partnership with Nielsen to create the Shelf Intelligence Suite, and its offering, Retail Watch, which helps retailers drastically reduce their losses from out-of-stock scenarios. The team is also in the process of integrating this intelligence into the online world, enabling online shoppers to seamlessly interact with physical products and notifying them upfront if a product is unavailable.

Going forward, Trax wants to ensure its business reaches consumers, even as it remains a B2B company at its core. It also plans to license its insights and integrate them into retail APPs. Finally, it is today in search of a partner to help them break into the Chinese market.





The value of GIC Insights comes not from our conduct of the event, but the generous sharing by our speakers and guests, as well as the relationships forged over the course of the event.

We extend our appreciation to all our guests who attended GIC Insights 2018 in the following pages.

Our Guests

(in order of organisation name)

Guests

(in order of organisation name)

A		
Affinity Equity Partners	<u>Tang Kok Yew</u>	Founding Chairman & Managing Partner
Alibaba Group	Joseph <u>Tsai</u>	Executive Vice Chairman
Allfunds Bank	Juan <u>Alcaraz Lopez</u>	Chief Executive Officer
Andreessen Horowitz	Connie <u>Chan</u>	General Partner
Ardian	Dominique <u>Senequier</u>	President
Atlas Merchant Capital	Bob <u>Diamond</u>	Founder & Chief Executive Officer
Atlas Merchant Capital	Patrick <u>Durkin</u>	Managing Director & Head of External Relations
Avanda Investment Management	<u>Ng Kok Song</u>	Founding Partner & Chairman
B		
Bain Capital Private Equity	Jonathan <u>Zhu</u>	Managing Director
Bandhan Bank	Chandra Shekhar <u>Ghosh</u>	Managing Director & Chief Executive Officer
BBAM	Steve <u>Zissis</u>	Chief Executive Officer
BDT & Company	Byron <u>Trott</u>	Chairman & Chief Executive Officer
Beijing Municipal Government	<u>Yin Yong</u>	Vice Mayor
BlackRock	Deborah <u>Ho</u>	Country Head, Singapore & Head of Southeast Asia
BNY Mellon	David <u>Cruikshank</u>	Chairman, Asia Pacific
BNY Mellon	Mitchell E. <u>Harris</u>	Chief Executive Officer, BNY Mellon Investment Management
Bridgewater Associates	Ray <u>Dalio</u>	Founder, Co-Chairman & Co-Chief Investment Officer
Bridgewater Associates	<u>Wang Yan</u>	Country Head, China
British Land	Chris <u>Grigg</u>	Chief Executive Officer
Brookfield Asset Management	Sam <u>Pollock</u>	Chief Executive Officer, Infrastructure
C		
Cainiao Network	Robert <u>Liu</u>	Chief Financial Officer
Capital First	V <u>Vaidyanathan</u>	Executive Chairman
Capital Group	Luis Freitas <u>de Oliveira</u>	Partner
CapitaLand	<u>Lee</u> Chee Koon	President & Group Chief Executive Officer
CapitaLand	<u>Lim</u> Ming Yan	Director
CDH Investments	<u>Wu</u> Shangzhi	Chairman
CDPQ	Anita <u>George</u>	Executive Vice President, Strategic Partnership – Growth Markets
Centurium Capital	David <u>Li</u>	Chairman
Cerberus Capital Management	Frank <u>Bruno</u>	Co-Chief Executive Officer

C		
Cerberus Capital Management	Noah <u>Kim</u>	Managing Director & Head of Asia Pacific
China International Capital Corporation	<u>Teh</u> Kok Peng	Senior Advisor
China Investment Corporation	<u>Liu</u> Jun	Executive Vice President
China Investment Corporation	Chengxuan <u>Song</u>	Vice President
China Jinmao Holdings Group	<u>Li</u> Congrui	President & Executive Director
China Lianhe Credit Information Service Co.	<u>Wang</u> Shaobo	Chief Executive Officer
China Resources Land	<u>Tang</u> Yong	Vice Chairman
China Society for Finance & Banking	<u>Zhou</u> Xiaochuan	Former Governor, People's Bank of China
CITIC Capital	Yichen <u>Zhang</u>	Chairman & Chief Executive Officer
COFCO Corporation	<u>Zhou</u> Zheng	Vice President
Corporate Governance Council	<u>Chew</u> Choon Seng	Chairman
CPIC	<u>Wei</u> Li	Managing Director, Fixed Income Department
CPP Investment Board	Suyi <u>Kim</u>	Senior Managing Director & Head of Asia Pacific
Credence Partners	<u>Koh</u> Boon Hwee	Chairman
CStone Pharmaceuticals	Frank <u>Jiang</u>	Chief Executive Officer
CStone Pharmaceuticals	Richard <u>Yeh</u>	Chief Financial Officer
D		
DBS Group Holdings	Peter <u>Seah</u>	Chairman
DCP Capital	David <u>Liu</u>	Chairman
DST Global	Yuri <u>Milner</u>	Founder
Dufry	Juan Carlos <u>Torres</u>	Chairman
Dufry	Julian <u>Diaz</u>	Chief Executive Officer
E		
EQT Partners	Thomas <u>von Koch</u>	Chief Executive Officer
F		
FCLTGlobal	Sarah <u>Williamson</u>	Chief Executive Officer
Ferrovial	Íñigo <u>Meirás</u>	Chief Executive Officer
G		
GIC	Tony <u>Tan</u> Keng Yam	Special Advisor
Global Infrastructure Partners	Adebayo <u>Ogunlesi</u>	Chairman & Managing Partner
GLP	Ming <u>Mei</u>	Chief Executive Officer

G		
Goldman Sachs (Asia)	Ken <u>Hitchner</u>	Chairman & Chief Executive Officer, Asia Pacific ex-Japan
Government of Singapore	<u>Heng</u> Swee Keat	Minister for Finance
Government of Singapore	<u>Lim</u> Hng Kiang	Special Advisor to Ministry of Trade & Industry
Government Pension Investment Fund	Norihiro <u>Takahashi</u>	President
GSA	Nick <u>Porter</u>	Chairman
H		
Happy Life Tech	<u>Gong</u> Rujing	Chairman & Co-Founder
Hemisfério Sul Investimentos	Max <u>Lima</u>	Partner
Hillhouse Capital Management	<u>Zhang</u> Lei	Founder & Chief Executive Officer
Hong Kong Shanghai Alliance Holdings	Andrew <u>Yao</u>	Chairman
Hopu Investment Management	<u>Fang</u> Fenglei	Chairman
Hopu Investment Management	<u>Zhang</u> Hong Li	Partner & Co-Chairman
I		
I Squared Capital	Sadek <u>Wahba</u>	Managing Partner
IHH Healthcare	<u>Tan</u> See Leng	Managing Director & Chief Executive Officer
J		
JAB Consumer Fund	Philip <u>von Wulffen</u>	Managing Partner
JAB Holding Company	Peter <u>Harf</u>	Senior Partner
Jardine Matheson	Mark <u>Greenberg</u>	Group Strategy Director
JP Morgan Asset Management	Richard <u>Titherington</u>	Chief Investment Officer, EMAP Equities
K		
K Raheja Corp	Neel <u>Raheja</u>	Group President
Katerra	Jim <u>Davidson</u>	Co-Founder
KKR	Ming <u>Lu</u>	Head of Asia Pacific
L		
Lansdowne Partners	Stuart <u>Roden</u>	Chairman
M		
Mexichem	Juan Pablo <u>del Valle</u>	Chairman of the Board
Ministry of Finance (Singapore)	<u>Tan</u> Ching Yee	Permanent Secretary (Finance)
Ministry of Finance (Singapore)	<u>Kwek</u> Poh Heok	Director (Policy & Communications Co-ordination) & Special Assistant to Minister
Ministry of Finance (Singapore)	<u>Lim</u> Zhi Jian	Director (Reserves & Investment)

M		
Mizuho Securities Co.	Kosuke <u>Nakamura</u>	Chairman
Monetary Authority of Singapore	Ravi <u>Menon</u>	Managing Director
Monetary Authority of Singapore	<u>Leong</u> Sing Chiong	Assistant Managing Director
N		
Naspers	Basil <u>Sgourdos</u>	Group Chief Financial Officer
NIO	<u>Li</u> Bin	Founder & Chief Executive Officer
Norges Bank Investment Management	Yngve <u>Slyngstad</u>	Chief Executive Officer
Northern Trust	Peter <u>Cherecwich</u>	President of Corporate & Institutional Services
Nova Property Investment (Shanghai) Co.	Qian <u>Wang</u>	Chairman & Co-Chief Executive Officer
Nuri Holdings	Michelle <u>Liem</u>	Managing Director
O		
OCBC	Lam Kun Kin	Senior Executive Vice President, Head of Global Treasury & Investment Banking
P		
P3 Logistic Parks	Ian <u>Worboys</u>	Chief Executive Officer
Pacific Century Group	Richard <u>Li</u>	Chairman & Chief Executive
PAG	Chris <u>Gradel</u>	Founding Partner
PAG	Weijian <u>Shan</u>	Chairman & Chief Executive Officer
Permira	Kurt <u>Björklund</u>	Co-Managing Partner
PrimePartners Group	<u>Hsieh</u> Fu Hua	Co-Founder & Advisor
PT Intiland Development Tbk	Hendro <u>Gondokusumo</u>	Founder, President Director & Chief Executive Officer
PT Triputra Agro Persada	Arif <u>Rachmat</u>	Co-Founder & Group Chief Executive Officer
R		
Razer Inc.	Min-Liang <u>Tan</u>	Chief Executive Officer
S		
SAFEIC	<u>Xiao</u> Heng	Deputy Head of Investment Department
Sberbank	Alexander <u>Morozov</u>	Deputy Chairman of the Executive Board & Chief Financial Officer
SCPG	<u>Ding</u> Liye	President & Chief Executive Officer
Sembcorp Industries	<u>Ang</u> Kong Hua	Chairman
Shunwei Capital	<u>Koh</u> Tuck Lye	Founding Partner & Chief Executive Officer
Singapore Embassy in Beijing	Stanley <u>Loh</u>	Ambassador
Sinochem Group Co.	Frank <u>Ning</u>	Chairman

S		
Source Code Capital	Yi <u>Cao</u>	Founding Partner
Springs Capital	James (Jun) <u>Zhao</u>	Founder & Chief Investment Officer
State Street Bank & Trust Company	<u>Seck</u> Wai Kwong	Chief Executive Officer, Asia Pacific
Sumitomo Mitsui Banking Corporation	Koichi <u>Miyata</u>	Chairman of the Board
T		
Taikang Insurance Group	<u>Zhang</u> Le	Member of Executive Committee, Taikang Asset Management; Managing Director, Taikang Asset Management (Hong Kong)
Tishman Speyer	Jerry <u>Speyer</u>	Chairman
Trax	Joel <u>Bar-El</u>	Chief Executive Officer
Triam Fund Management	Nelson <u>Peltz</u>	Founding Partner & Chief Executive Officer
U		
UBS Asset Management	Geoffrey <u>Wong</u>	Managing Director
Unicharm Corporation	Takahisa <u>Takahara</u>	President & Chief Executive Officer
V		
Vision Plus Capital	Eddie <u>Wu</u>	Chairman & Partner
W		
Warren Securities	<u>Tjio</u> Kay Loen	Director
Wellington Management	Phillip <u>Perelmuter</u>	Head of Wellington Management International
Wuxi AppTec	Ge <u>Li</u>	Chairman
Y		
Yanlord Group	<u>Zhong</u> Sheng Jian	Chairman & Chief Executive Officer
#		
	Ben <u>Meng</u>	



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