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主讲人：田静

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Ride hailing: Steering group

from The Economist

OF ALL his ambitious plans, Masayoshi Son's most audacious is to create an informal business group among the world's leading ride-hailing firms. SoftBank has put \$20bn into these businesses, starting in 2014 with an investment in India's Ola. It soon added a stake in Grab, which operates across South-East Asia. Its first investment in China's Didi came in 2015; it later added an investment in Brazil's 99 (which is controlled by Didi). Its 15% stake in Uber was acquired in January. How sound a bet this web of investments is remains uncertain, given low barriers to entry and the fact that none of the firms is profitable. But now that around 90% of rides hailed in the world—45m a day—use one of the firms in which SoftBank has stakes, success for the industry will almost inevitably mean success for Mr. Son. In the near term, the focus is on encouraging the ride-hailing firms to compete less feverishly and push up fares. Mr. Misra has called on Uber to concentrate on its core markets of North and South America, Europe and

Australia in order to narrow its losses before an IPO expected in 2019. In March SoftBank pulled off a coup when Uber agreed to sell its business in South-East Asia to Grab in return for a 27.5% stake. Uber will stop operating in Singapore, the Philippines, Malaysia and Vietnam, leaving the field clear, in theory, for Grab to raise prices.

SoftBank is now urging consolidation in India, where Uber is battling Ola. Mr. Son and Mr. Misra are encouraging meetings between the firms' bosses and stress the benefits of a deal. But having backed out of Russia, China and South- East Asia, Uber is determined not to cede in India. It will test the relationship between Uber and its new, biggest shareholder. "Masa can be forceful but it is advice only" says Dara Khosrowshahi, Uber's boss.

In the longer term Mr. Son sees ride- hailing as a way to profit from a wider upheaval in transport, as the firms develop autonomous cars and roll out electric vehicles. He may invest in charging stations, as well as leasing and financing vehicles. Mr. Son's family of firms could help. Nauto, for example, collects data about drivers' behaviour that will be useful for self-driving cars.

As Mr. Khosrowshahi notes, it is another example of Mr. Son putting the pieces together and seeing the end state in an industry. And then backing the idea with lots of money.

Vocabulary:

1. ambitious adj.
2. audacious adj.
3. ride-hailing n.
4. investment n.
5. stake n.
6. acquire v.
7. sound adj.
8. barrier n.
9. inevitably adj.
10. feverishly adv.
11. concentrate v.

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12.coup n.

13.urge v.

14.consolidation n.

15.determine v.

16.cede v.

17.upheaval n.

18.autonomous adj.

19.vehicle n.

20.charge v.

21.lease v.

22.finance v.

Grammar:

1. OF ALL his ambitious plans, Masayoshi Son's most audacious is to create an informal business group among the world's leading ride-hailing firms.
2. How sound a bet this web of investments is remains uncertain, given low

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barriers to entry and the fact that none of the firms is profitable.

3. But now that around 90% of rides hailed in the world—45m a day—use one of the firms in which SoftBank has stakes, success for the industry will almost inevitably mean success for Mr. Son.
4. Uber will stop operating in Singapore, the Philippines, Malaysia and Vietnam, leaving the field clear, in theory, for Grab to raise prices.
5. In the longer term Mr. Son sees ride-hailing as a way to profit from a wider upheaval in transport, as the firms develop autonomous cars and roll out electric vehicles.

Paying No Mind

from The Economist

FOR many it is a reflex as unconscious as breathing. The hand reaches for the phone and opens the social network of choice. A blur of time passes, and half an hour or more of what ought to have been productive effort is gone. A feeling of regret is quickly displaced by the urge to see what has happened on Twitter in the past 15 seconds. Distraction is a constant these days; supplying it is the business model of some of the world's most powerful firms. As economists search for explanations for sagging productivity, some are asking whether the inability to focus for longer than a minute is to blame.

Distractions dearly affect performance on the job. Depending on the study you pick, smartphone-users touch their device somewhere between twice a minute to once every seven minutes. Conducting tasks while receiving e-mails and phone calls reduces a worker's IQ by about ten points relative to working in uninterrupted quiet. That is equivalent to losing a night's sleep,

and twice as debilitating as using marijuana. By one estimate, it takes nearly half an hour to recover focus fully for the task at hand after an interruption, what's more, constant interruptions accustom workers to distraction, teaching them, in effect, to lose focus and seek diversions.

Could this explain the rich world's productivity slowdown? A paper published by Massachusetts Institute of Technology, analysed firms' use of information technology and its effects on labour productivity and revenue growth. They found an inverted U-shape pattern associated with multitasking and productivity. An initial increase in multitasking from the increased use of IT seems to raise productivity. But later, the accumulation of balls to be juggled reduces performance and increases the incidence of error.

IT does help workers in all sorts of ways. It speeds communication and allows documents to be shared remotely. The web makes finding information far simpler and quicker than it was in a world of paper archives. Productivity surged in the late 1990s and early 2000s as e-mail, digital databases and the

web spread. The benefits technology brought, at that time, seemed to outweigh the cost of distraction. Since the mid-2000s, however, productivity growth has tumbled, perhaps because the burden of distraction has crossed some critical threshold.

But this is surely not the whole story. Performance across industries does not fit very well with the idea that distraction is the main cause of weak productivity. Over the past decade, labour-productivity growth in both manufacturing and construction has been particularly disappointing—and the problem can hardly be desk jockeys frittering away time on Pinterest.

Weak productivity is also a consequence of the reallocation of workers from industries with relatively high rates of growth to more stagnant ones. In America health care and education, where labour productivity is persistently low, account for more than half of total employment growth since 2000.

How then to reconcile evidence of the toll taken by new technologies with the difficulty in detecting a productivity cost? One possibility is that firms have not been as strenuous as might be expected in maximising output per

worker. Employment does not fall much in response to minimum-wage rises because output per worker goes up. That is partly because workers try harder and partly because firms, faced with a new cost, focus more on tracking worker performance. Similarly, productivity leapt in the immediate aftermath of the financial crisis, and not because firms laid off less productive workers. Rather, workers appear to have upped their game to convince bosses not to sack them. After a decade of low wages and high profits, firms may be feeling complacent. That, and their consequent failure to invest, may be a better explanation of weak productivity than workers' distraction.

Vocabulary:

1. unconscious adj.
2. blur n.
3. distraction n.

4. constant n.

5. sag v.

6. conduct v.

7. equivalent adj.

8. debilitate v.

9. marijuana n.

10. accustom v.

11. diversion n.

12. revenue n.

13. associated adj.

14. accumulation n.

15. incidence n.

16. communication n.

17. archive n.

18. outweigh v.

19. manufacturing n.

20.construction n.

21.consequence n.

22.reallocation n.

23.stagnant adj.

24.persistently adv.

25.reconcile v.

26.strenuous adj.

27.financial crisis

28.laid off

29.complacent adj.

30.consequent adj.

Grammar:

1. As economists search for explanations for sagging productivity, some are asking whether the inability to focus for longer than a minute is to blame.
2. A paper published by Massachusetts Institute of Technology, analysed

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firms' use of information technology and its effects on labour productivity and revenue growth.

3. Performance across industries does not fit very well with the idea that distraction is the main cause of weak productivity.
4. Weak productivity is also a consequence of the reallocation of workers from industries with relatively high rates of growth to more stagnant ones.
5. In America health care and education, where labour productivity is persistently low, account for more than half of total employment growth since 2000.
6. One possibility is that firms have not been as strenuous as might be expected in maximising output per worker.

The Future of Big Data: Distilling Less Knowledge Per Bit

from Scientific American

Until recently, the word data didn't require a modifier. But we passed a watershed moment when we started referring to big data. Apparently, that wasn't a sufficient description for some chunks of data, because people grasped for bolder terms, such as humongous data. Sadly, now, it appears that we have run out of appropriate adjectives. And yet data keeps getting bigger and bigger.

So instead of mentioning data, people have begun waving their hands and talking vaguely about the "cloud." This seems to be the perfect metaphor—a mystical vapor hanging over Earth, occasionally raining information on the parched recipients below. It is both unknowable and all-knowing. It answers all questions, if only we know how to interpret those answers.

This evolution brings to mind two images. The first is from the current scientific hypothesis that all of the information in a black hole resides in the event horizon that surrounds it. This is like the idea of the cloud, while on

Earth below, the practical reality of the cloud manifests in proliferating server farms. These farms bring the second image to mind: Douglas Adams' s city-size supercomputer, Deep Thought, from the classic novel (and radio play and TV show and movie) *The Hitchhiker's Guide to the Galaxy*.

With these imaginary end states in mind, I wonder: Where is all this headed?

Will data increase indefinitely, or is there some point of diminishing returns?

Is there such a thing as enough data—or possibly too much?

There is a popular saying that "data is the new oil." While I think this is an imperfect metaphor, it is true that both oil and data require refining to be useful. I'm mindful of the information pyramid described in T.S. Eliot's poem "The Rock": "Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information?"

For the purposes of our discussion, let's say that data is composed of 1s and 0s, information is the words and images encoded by data, and knowledge is what we glean or learn from that information. The critical refining is between information and knowledge. In the refining of oil, the ratio of the

useful final product to the starting amount of crude is not a function of the amount of crude. Not so with information: The more crude information we have to deal with, the less knowledge we want to produce per bit. Otherwise, big data will simply overwhelm us as it continues to grow. What we want is the small knowledge that we obtain from the big information. As the data set gets bigger, the job gets harder. The catch, however, is that unless the big information is big enough, it may not contain the small signal that we are searching for.

Knowledge inevitably increases, so data has to increase even faster. Fortunately, storage technology seems capable of coping without turning Earth into a giant disk drive, but the crunch will be on the artificial intelligence and algorithms that turn data into knowledge. We have come a long way since Claude Shannon, in his classic paper on information theory, in 1948, could simply ignore the knowledge problem by writing: "Frequently the messages have meaning.... These semantic aspects of communication are irrelevant to the engineering problem."

I'm also mindful of the propensity of drawers, closets, and hard drives to eventually become filled with useless junk. I sometimes blame this on the second law of thermodynamics, which states that entropy — that is, disorder—always increases. Perhaps this will ultimately be true of the cloud. Old, useless information accumulates, and it's too much work to purge it. Moreover, who's to say what is useless and what is not? Everything is in there, but everything is too much. Entropy is maximized, and the data ultimately becomes, as Shakespeare put it, full of sound and fury, signifying nothing.

Vocabulary:

1. distill v.
2. modifier n.
3. humongous adj.
4. appropriate adj.
5. adjective n.

6. metaphor n.

7. interpret v.

8. hypothesis n.

9. manifest v.

10. proliferate v.

11. indefinitely adv.

12. diminish v.

13. be composed of...

14. encode v.

15. ratio n.

16. overwhelm v.

17. artificial intelligence

18. algorithm n.

19. semantic adj.

20. irrelevant adj.

21. propensity n.

22.thermodynamics n.

23.entropy n.

24.accumulate v.

25.signify v.

Grammar:

1. The first is from the current scientific hypothesis that all of the information in a black hole resides in the event horizon that surrounds it.
2. While I think this is an imperfect metaphor, it is true that both oil and data require refining to be useful.
3. The more crude information we have to deal with, the less knowledge we want to produce per bit.
4. What we want is the small knowledge that we obtain from the big information.
5. The catch, however, is that unless the big information is big enough, it may not contain the small signal that we are searching for.

Online platforms: Nostrums for rostrums

from The Economist

IN 1949 Frank McNamara, an executive at a struggling finance company, had the idea of a charge card to settle the tab at high-class eateries. First, he had to solve a tricky problem. Restaurants would not accept a charge card as payment unless customers wanted to use one; and diners would not carry a card unless restaurants accepted it. His solution was to give away his card to a few hundred well-heeled New Yorkers: once the elite of Manhattan's gourmands were signed up, he could persuade a few upscale restaurants to accept his new charge card and also to pay him a commission. Within a year, the Diners Club card was accepted in hundreds of places and carried by over 40,000 people.

The Diners Club may not seem to have much in common with digital giants like Facebook, Google, Uber and Amazon. But such businesses are all examples of "platforms": they act as matchmakers between various entities and they typically charge different prices to different actors in the market.

The growing clout of online platforms is a boon to society but a headache for trustbusters. Platforms benefit from the power of networks: the more potential matches there are on one side of a platform, the greater the number that flock to the other side. The consequence may be a monopoly. That is normally a red flag for trustbusters, who are scrambling to keep pace with the rise of platforms. But they should tread carefully. The nature of platforms means established rules of regulation often do not apply.

In a conventional, "one-sided" market, prices are related to the cost of supplying goods and services. If a business can charge a big mark-up over its marginal cost of production, a wise regulator would strive to ensure there are enough firms vying for business or, where that is not possible, to set prices in line with the monopolist's costs.

But they are right to be thinking about the unique economics of platforms. Tech giants like to claim there is no need for special regulation. The winner-takes-all aspect of networks may mean there is less competition inside the market, but there is still fierce rivalry for the market, because countless

startups are vying to be the next Google or Facebook. Unfortunately, incumbents maybe able to subvert this rivalry.

One of their strategies is to use mergers. "Shoot-out" acquisitions is the name given to purchases of startups with the aim of eliminating a potential rival. Many claim that Facebook's acquisition of WhatsApp was in this category.

A second concern is talent. Tech firms are jealous of their secrets. When their best people leave, they take ideas with them. Yet clauses in job contracts that restrict what types of work employees can do once they leave a company are also a means of thwarting the emergence of rivals. California has shown the way by clamping down on such practices.

A third issue is the power of personal data. Google is such an effective search engine in part because its algorithms draw on vast logs of past queries. Amazon can use customers' trading history to guide its marketing with greater precision. These data troves raise barriers to entry to the next Google or Amazon. There are no easy fixes, however. Even defining who

owns information is complex; making data portable is tricky.

Vocabulary:

1. executive n.
2. tricky adj.
3. elite n.
4. gourmand n.
5. commission n.
6. matchmaker n.
7. entity n.
8. trustbuster n.
9. monopoly n.
10. scramble v.
11. conventional adj.
12. marginal adj.
13. vying (vie) v.

14.monopolist n.

15.rivalry n.

16.incumbent n.

17.subvert v.

18.acquisition n.

19.eliminate v.

20.restrict v.

21.thwart v.

22.algorithm n.

23.query n.

24.portable adj.

Grammar:

1. Platforms benefit from the power of networks: the more potential matches there are on one side of a platform, the greater the number that flock to the other side.

2. If a business can charge a big mark-up over its marginal cost of production, a wise regulator would strive to ensure there are enough firms vying for business or, where that is not possible, to set prices in line with the monopolist's costs.
3. The winner-takes-all aspect of networks may mean there is less competition inside the market, but there is still fierce rivalry for the market, because countless startups are vying to be the next Google or Facebook.
4. Yet clauses in job contracts that restrict what types of work employees can do once they leave a company are also a means of thwarting the emergence of rivals.

AI in society — the unexamined mind

from The Economist

Science fiction is littered with examples of intelligent computers, from HAL 9000 in "2001: A Space Odyssey" to Eddie in "The Hitchhiker's Guide to the Galaxy". One thing such fictional machines have in common is a tendency to go wrong, to the detriment of the characters in the story. HAL murders most of the crew of a mission to Jupiter. Eddie obsesses about trivia, and thus puts the spacecraft he is in charge of in danger of destruction. In both cases, an attempt to build something useful and helpful has created a monster.

Successful science fiction necessarily plays on real hopes and fears. In the 1960s and 1970s, when HAL and Eddie were dreamed up, attempts to create artificial intelligence (AI) were floundering, so both hope and fear were hypothetical. But that has changed. The invention of deep learning, a technique which uses special computer programs called neural networks to churn through large volumes of data looking for and remembering patterns,

means that technology which gives a good impression of being intelligent is spreading rapidly. Applications range from speech-to-text transcription to detecting early signs of blindness. AI now runs quality control in factories and cooling systems in data centres. Governments hope to employ it to recognise terrorist propaganda sites and remove them from the web. And it is central to attempts to develop self-driving vehicles. Of the ten most valuable quoted companies in the world, seven say they have plans to put deep learning-based AI at the heart of their operations.

Real AI is nowhere near as advanced as its usual portrayal in fiction. It certainly lacks the apparently conscious motivation of the sci-fi stuff. But it does turn both hope and fear into matters for the present day, rather than an indeterminate future. And many worry that even today's "AI-lite" has the capacity to morph into a monster. The fear is not so much of devices that stop obeying instructions and instead follow their own agenda, but rather of something that does what it is told (or, at least, attempts to do so), but does it in a way that is incomprehensible.

The reason for this fear is that deep-learning programs do their learning by rearranging their digital innards in response to patterns they spot in the data they are digesting. Specifically, they emulate the way neuroscientists think that real brains learn things, by changing within themselves the strengths of the connections between bits of computer code that are designed to behave like neurons. This means that even the designer of a neural network cannot know, once that network has been trained, exactly how it is doing what it does. Permitting such agents to run critical infrastructure or to make medical decisions therefore means trusting people's lives to pieces of equipment whose operation no one truly understands.

If, however, AI agents could somehow explain why they did what they did, trust would increase and those agents would become more useful. And if things were to go wrong, an agent's own explanation of its actions would make the subsequent inquiry far easier. Even as they acted up, both HAL and Eddie were able to explain their actions. Indeed, this was a crucial part of the plots of the stories they featured in. At a simpler level, such powers

of self-explanation are something software engineers would like to emulate in real AI.

Vocabulary:

1. tendency n.
2. detriment n.
3. obsess v.
4. destruction n.
5. artificial intelligence
6. flounder v.
7. hypothetical adj.
8. application n.
9. transcription n.
10. propaganda n.
11. portrayal n.
12. motivation n.

13.indeterminate adj.

14.incomprehensible adj.

15.emulate v.

16.neuroscientist n.

17.neural adj.

18.infrastructure n.

19.subsequent adj.

20.inquiry n.

Grammar:

1. The invention of deep learning, a technique which uses special computer programs called neural networks to churn through large volumes of data looking for and remembering patterns, means that technology which gives a good impression of being intelligent is spreading rapidly.
2. The fear is not so much of devices that stop obeying instructions and instead follow their own agenda, but rather of something that does what

it is told (or, at least, attempts to do so), but does it in a way that is incomprehensible.

3. The reason for this fear is that deep-learning programs do their learning by rearranging their digital innards in response to patterns they spot in the data they are digesting.
4. Specifically, they emulate the way neuroscientists think that real brains learn things, by changing within themselves the strengths of the connections between bits of computer code that are designed to behave like neurons.
5. This means that even the designer of a neural network cannot know, once that network has been trained, exactly how it is doing what it does.
6. Permitting such agents to run critical infrastructure or to make medical decisions therefore means trusting people's lives to pieces of equipment whose operation no one truly understands.
7. If, however, AI agents could somehow explain why they did what they did, trust would increase and those agents would become more useful.

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And if things were to go wrong, an agent's own explanation of its actions
would make the subsequent inquiry far easier.