



# SOME REFLECTIONS ON STRATEGIC INNOVATION

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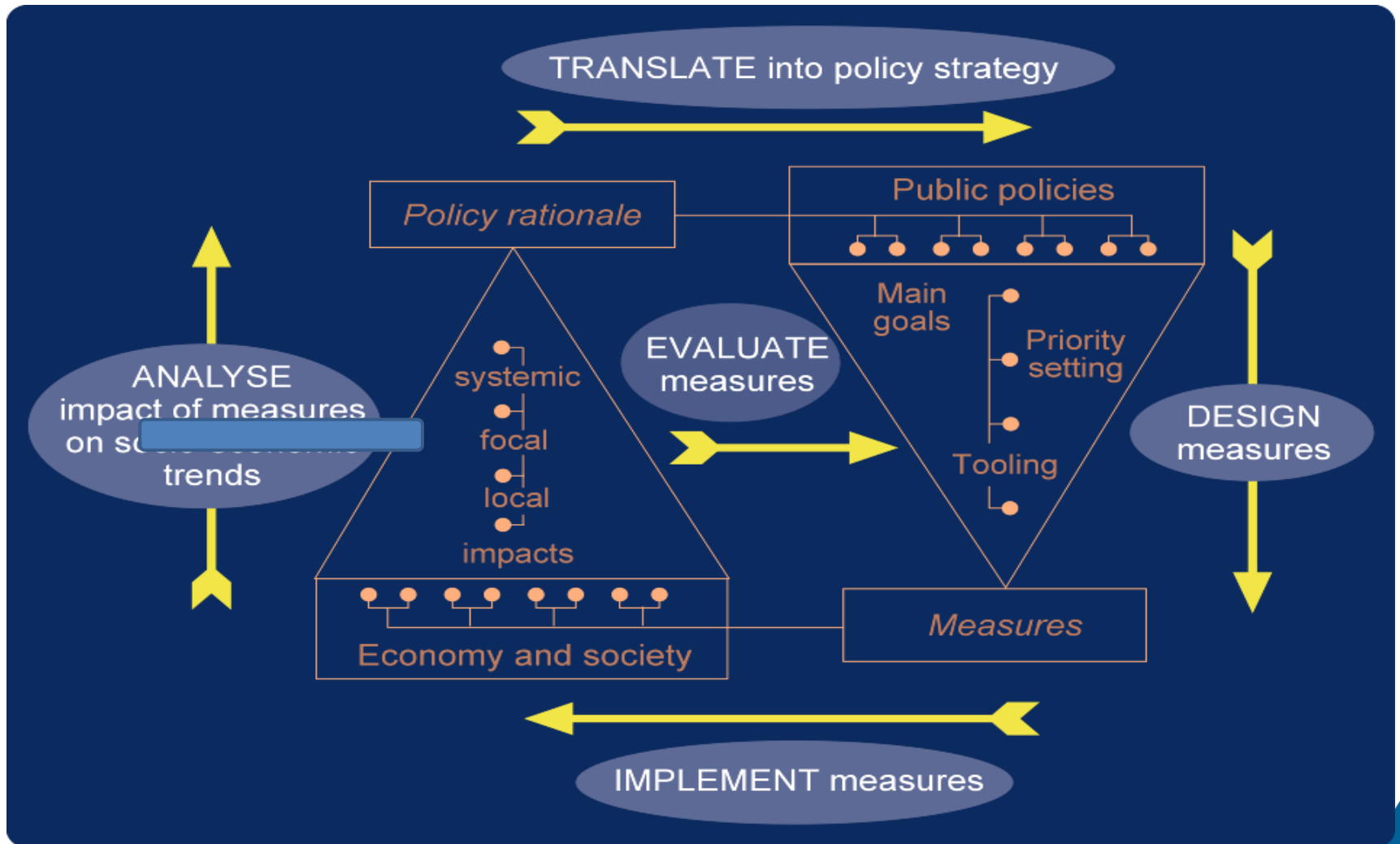
# What is strategic innovation (SI)?

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- Originally a business management concept.
- Used in a policy context, it can describe the kind of intervention that aims to create technological capacity for one or several of the following purpose:
- It is key for realising/addressing key social development goal,
- It is key to the international competitiveness of the industry or the economy of the country;
- It could be built on your existing comparative advantage/natural endowment or
- It could help create future comparative advantage or to gain a competitive edge in the future .



# Process for setting and implementing strategic innovation targets





## The need for alternative energy vehicle

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- In 2009, China became the largest producer and consumer of cars in the world. But it gives rise of two major problems for China – oil shortages and air pollution.
- By 2030, as much as 75 percent of China's oil might be imported, and the dependency on overseas natural gas will also rise rapidly, bringing grave energy security concerns.



## The government's decision

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- This gave impetus to China's development of electric vehicles;
- In March 2012, the national Development & Reform Commission (NDRC) and the Ministry of Science the Technology (MOST) issued the *Exclusive Plan on EV of the 12<sup>th</sup> Five Year Plan*. In this document, China clearly decided that it would focus on developing new energy vehicles (EV).
- In April, the State Council approved an authoritative plan which integrates all the earlier policies and initiatives and



## Policy measures to implement the decision: a strong government hand

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- The force behind the implementation is comprehensive industrial development policies at all levels of government which support *both the supply and demand sides* of the market equation.
- In general, the Chinese government requires companies to invest in new projects according to the Plan and abide by certain standards. In return, those that do will enjoy favorable policies such as low tax rates, cheap money from policy banks, and R&D grants, and those that don't will be punished either directly or indirectly.



## Supply-side policy measures:

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- On the supply side, financial support is provided to develop technology by companies. At the same time, leading research institutes in the field can team up with companies and also apply for advanced R&D funding. Billions of Yuan will be invested in this manner.
- Further, when an company plans to expand production capacity for traditional vehicles, it must include investment in new energy vehicle capacity as well. Otherwise, the expansion plan may not be approved by the NDRC.
- The government will introduce fuel consumption standards, and fine the companies which do not achieve the standards.



## The demand measures:

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- On the demand side, policies reach deep into local governments. The *Exclusive Plan* calls for the creation of 25 “demonstration cities” where purchase of E-vehicles by the public sector would be especially supported.
- This program actually started in 2009 with 10 cities. In subsequent years, new cities were added up to 25 cities. Under this program, it was expected that some 60,000 E-vehicles would be sold in 2012.





## More demand measures

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- Each city gets central government support, and each local government, in turn, develops subsidies for buyers, generally about 20% of the sale price. Local governments also provide certain subsidies to companies.
- Estimates cost of the government intervention will be in the neighborhood of RMB 100 billion, or some US\$18 billion.



## Concluding observations:

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- The research concluded that we do not know whether China's E-vehicle program will succeed, or if money will be invested prudently, or if tens of billions will be wasted.
- But we do know that when China commits to a program like this, it is an “all in” affair. We could “feel” the commitment at every level – central government, local governments, and business management. When China's planning system finally commits to a specific task, it seems able to get over a billion people looking in the same direction, and that presents a formidable challenge.
- Latest observation: China's new energy automobile industry will not enter the phase of commercial use before 2020.



## China's need for semiconductor industry

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- China is by far the largest consumer of semiconductors; it accounts for about 45 percent of the worldwide demand for chips, used both in China and for exports.
- But more than 90 percent of its consumption relies on imported integrated circuits.



## The demand for semiconductor in China will further increase because

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- The fast development of the Chinese electronics industry, from Android mobile handsets to Lenovo computer;
- Multinational corporations increasingly are establishing design centers on the mainland to be closer to customers and benefit from local Chinese talent.
- As the migration of design continues, China could soon influence up to 50 percent of hardware designs globally.



## Lessons from past intervention

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- The government's previous attempts to build the industry, dating all the way back to the 1990s, had mixed results because funding plans and incentives were focused more on research and academia than on business. Additionally, investments were fragmented—at one point, the government had invested in 130 fabrication sites across more than 15 provinces, none of which was able to capitalize on the scale and scope of its neighbors' sites, and supporting industries never materialized.



## A market-based policy effort

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- Decisions about allocating for-profit investment funds will be managed by professionals, but will remain aligned with the government's policy objectives.
- A unique task force group helped develop a policy framework that is targeting a compound annual growth rate for the industry of 20 percent between now and 2020, with potential financial support from the government of up to 1 trillion renminbi (\$170 billion) over the next five to ten years.
- Investments will be made by a national investment vehicle (the National Industry Investment Fund) and provincial-level entities.



## A different task force and approach

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- Led by a Vice Premier Ma Kai,
- composed with: MIIT, MOST, MOF, and NDRC.
- And the top 10 to 15 leaders in China's semiconductor;
- This committee had a direct influence on the State Council during its drafting of the *Guideline of the National IC Industry Development Promotion*, the high-level policy framework that was shared publicly in June 2014.



## Concluding remarks

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*In China and elsewhere across the globe, government intervention in the semiconductor market has been a mixed bag—some successes, some missed opportunities.*

*Still, with its massive customer and installed-manufacturing base, its deep bench of engineering talent, and its financial resources, the Chinese government is better positioned than most others to make a big policy bet and it can afford to be patient.*





## Some personal reflections:

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- Government STI strategies are increasingly targeting at priority sectors;
- It requires a coordinated policy approach, involving the private sector stakeholders,
- The policy intervention can be costly and long term.
- It will require a government with strong executing capability.



# OBRIGADO-THANK YOU-谢谢!

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