



Demand-side Policies to Promote Mission-oriented Innovation in China – the case of the New Energy Vehicles (NEV) program

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Demand-side Policies to Promote Mission-oriented Innovation in China

- the case of New Energy Vehicles (NEV) program

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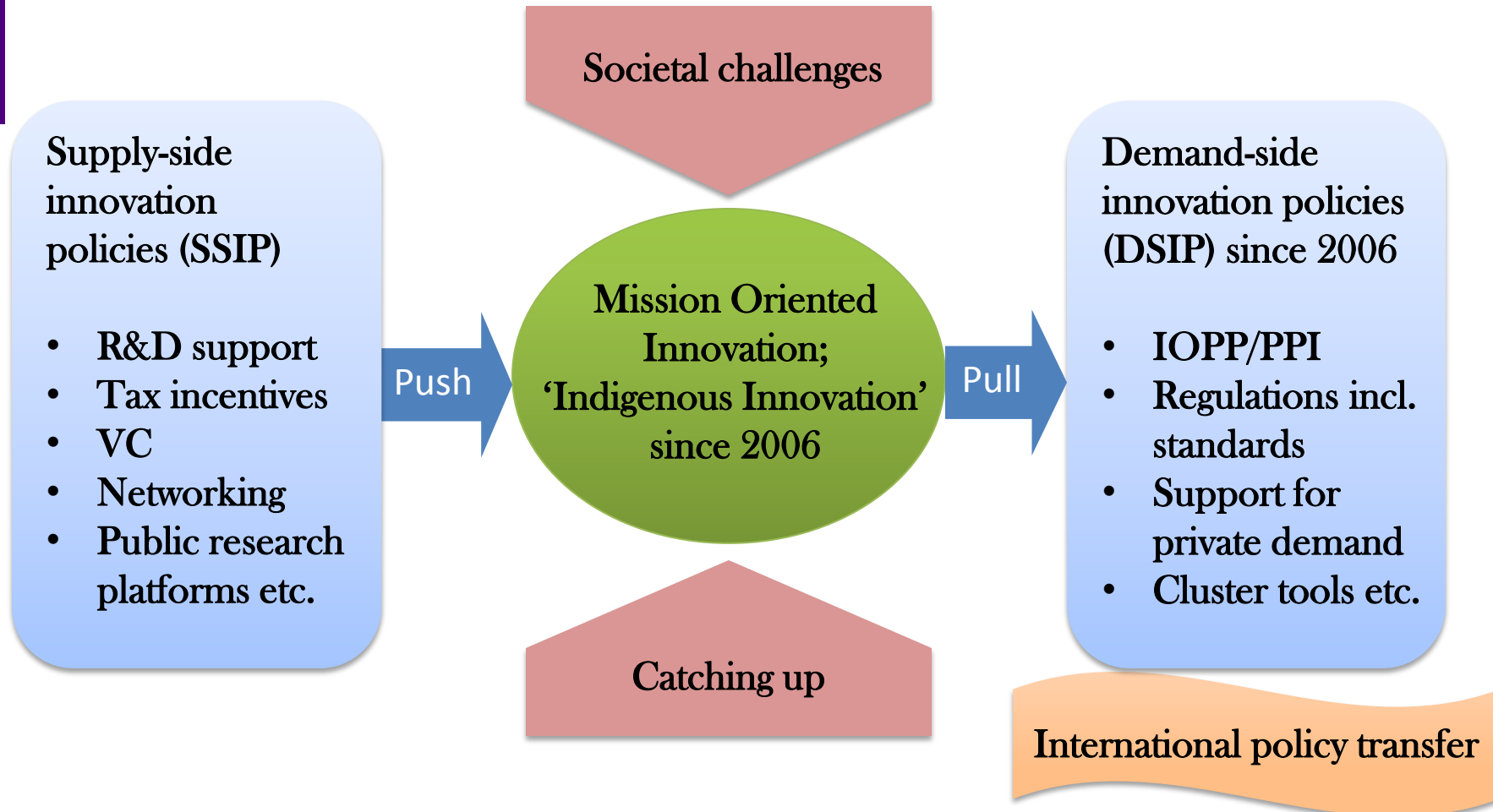
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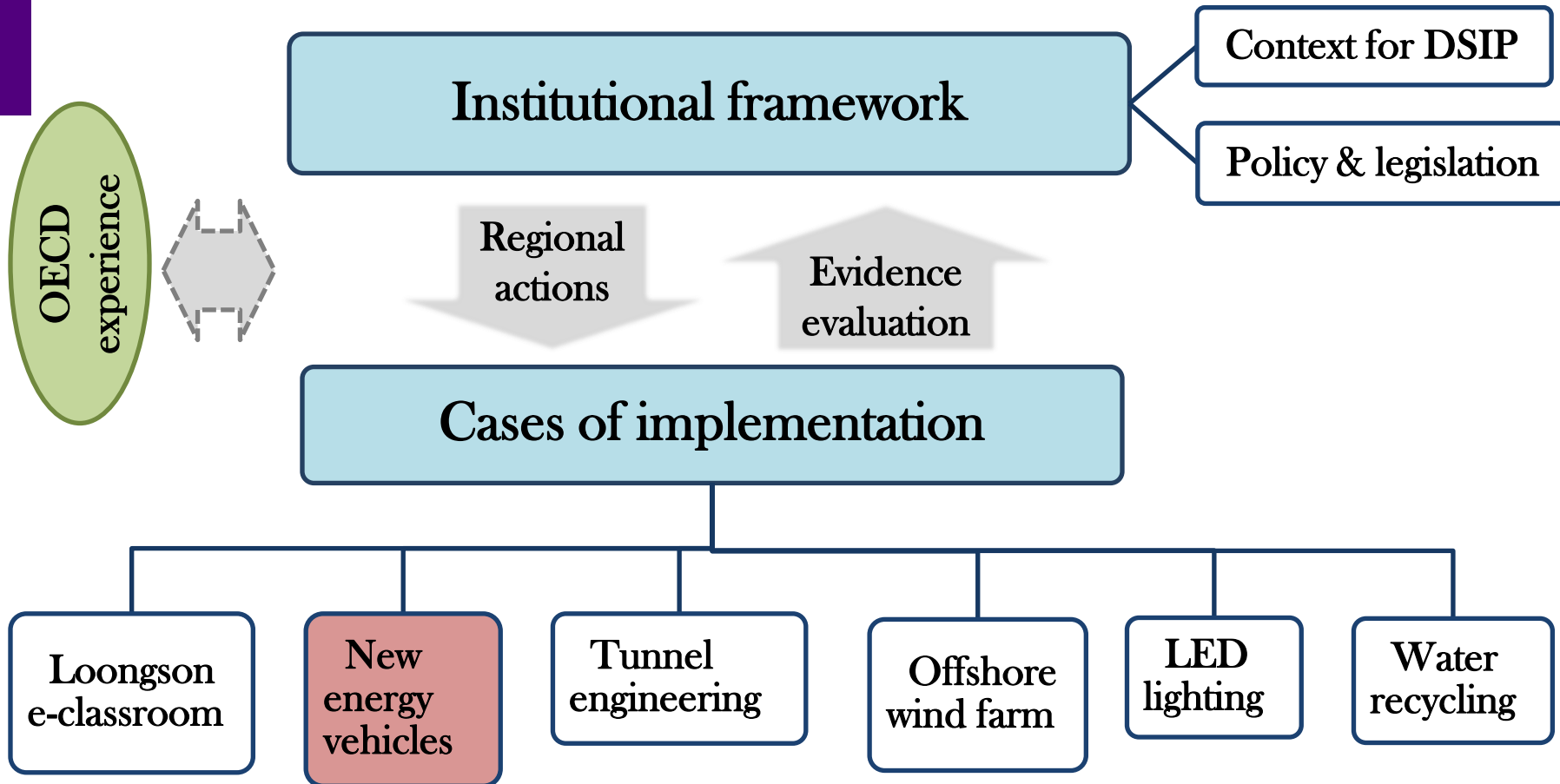
OUTLINE

- **The rise of DSIPs especially IOPP/PPI in China**
- **Positioning the study**
- **Promotion of NEVs in China - policies**
- **‘Ten Cities, Thousands of NEVs’ program - implementation**
- **Discussion and implications**

The rise of DSIPs especially innovation-oriented public procurement (IOPP) in China since the announcement of the National Medium- and Long-term Program for Science and Technology Development (2006-2020), MLP (2006-2020)



An Institutional Assessment of IOPP as a Demand-side Innovation Policy (DSIP) in China



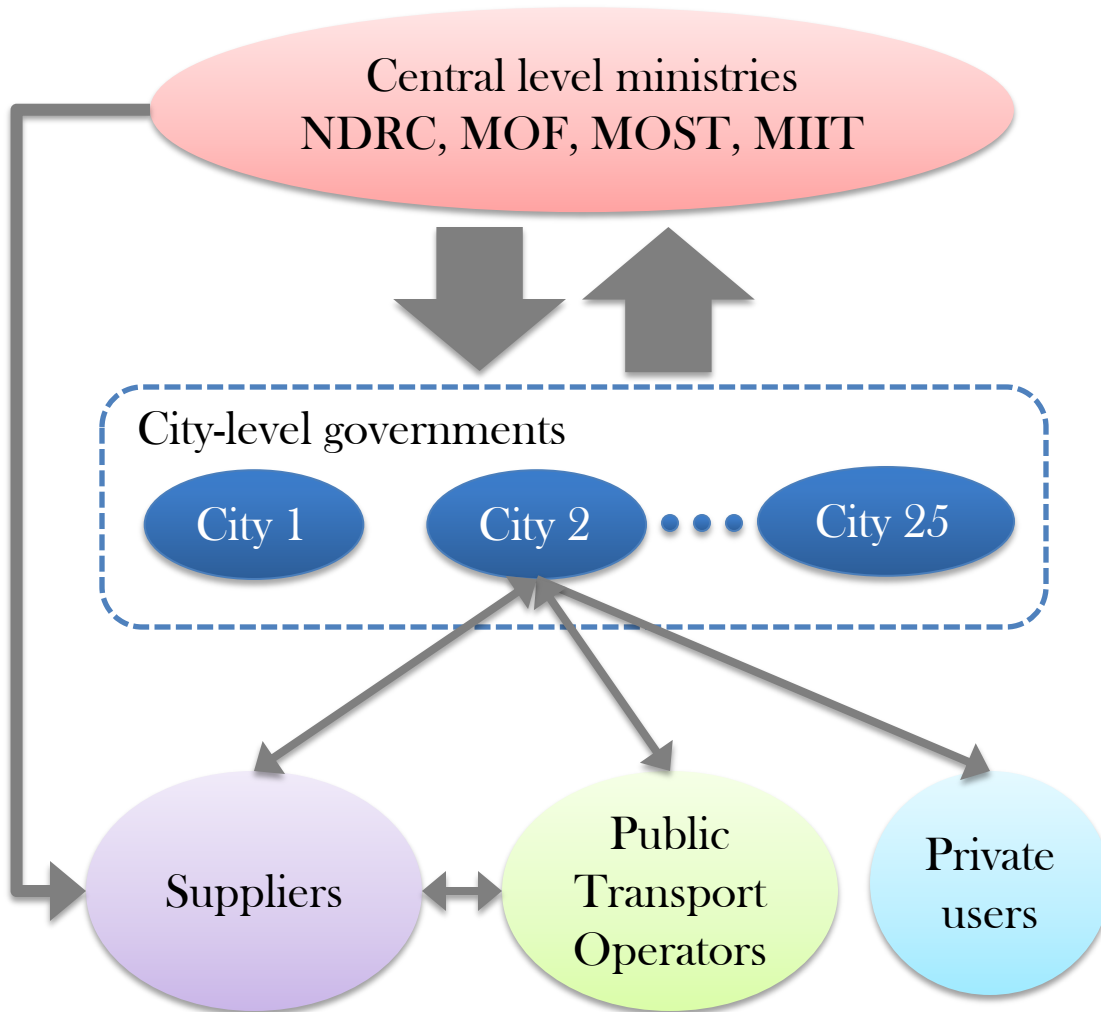
Classification of DSIPs adopted in China

Forms	Catalogues of equipment and other strategic technologies	Routinized IOPP mechanism via ‘innovation catalogues’	Active participation in standards setting	Support programs for key, strategic and emerging areas
Rationale	Signalling national demand; technology roadmap	Enhancing communication between suppliers and procurers	Using standards to drive indigenous innovation	Creating lead market; systemic mix of instruments
Implementation	Specialized ministries launch annual catalogues to inform researchers & suppliers	Ambiguous national measures; regional autonomy in developing local mechanisms; diversified	Stakeholder engagement; regional initiatives; combined with sectoral policies	Targeted at various sectors e.g. LED lighting, solar energy and new energy vehicles (NEV)
Current status	Relatively smooth; suitable for the Chinese top-down system	Withdrawn in July 2011 in response to international concerns	Controversial; lack of capabilities is evident	Results diversified across sectors; achievements as well as losses

NEV related policies in China - intro

- **New energy vehicles**: plug-in hybrid electric, battery electric and fuel cell vehicles; energy saving vehicles: regular hybrid vehicles that do not require external power supply. Chinese practitioners normally refer both as new energy vehicles (NEV).
- **Policy focus**:
 - R&D for the past decade; since 2009 a trend of tool differentiation;
 - More stakeholders involved along the supply chain;
 - Complex policy mix across domains of environment, sector, energy and STI.
- **Three major driving forces** with an obvious mission orientation:
 - societal factors, i.e. energy shortage and environmental pressure;
 - indigenous innovation strategy and catching up;
 - the government considered that the turning point to commercialization has arrived.
- **Approach**:
 - Policy analysis with a focus on rationale justification.
 - Micro-level analysis, i.e. two sub-case studies that include concrete IOPP processes.
 - Data collected through elite interviews with 12 respondents; government and firm documentation; mass media.

'Ten Cities, Thousands of NEVs' program design



- **Duration:** 2009 - 2012
- **Ministries**
 - select participants according to industry and market potential
 - set up policy targets
 - regulate entry permits for suppliers
- **City governments**
 - provide implementation measures
 - coordinate stakeholders
 - report progress to the centre
- **Rationale:** creating lead markets in suitable cities
- **Financing:** central and local funding 1:1

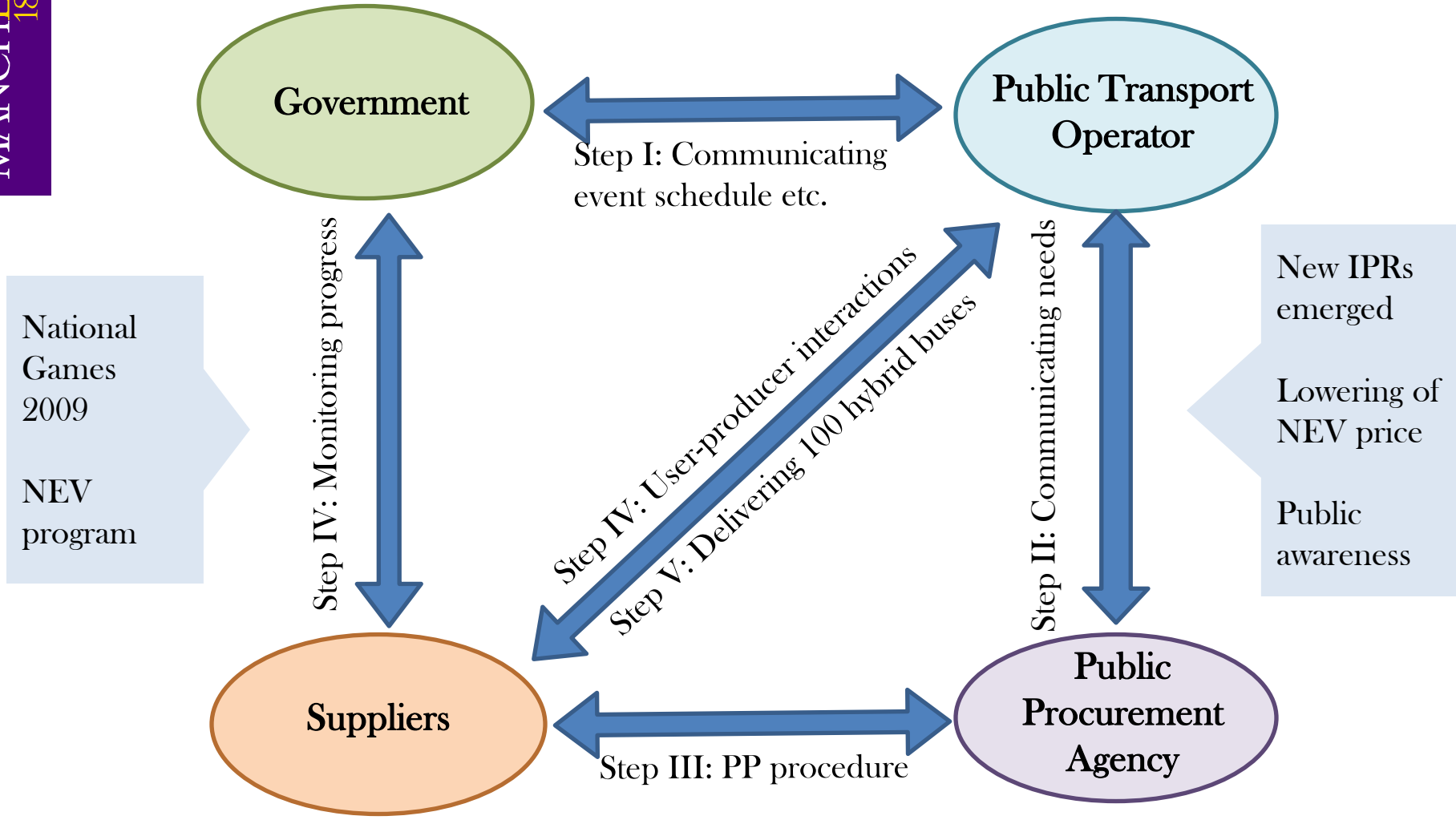
‘Ten Cities, Thousands of NEVs’ policy rationale

Policy code	Content	Rationale
Caijian(2009)6 & (2010)227 & (2010)434 & Caibanjian(2011)149	Nominating participant cities (25 cities in three batches); defining core concepts, brief guidance about departmental involvement, funding and monitoring etc.	Operating framework for lead market construction for public transport sector
Caijian (2010)230 & (2011)754 & Law on Taxation	Nominating six cities enjoying consumer subsidies, detailing measures for action.	Incentives for private users
Fagaigonggao (2007) 72 & Gongchanye (2009)44	Detailing the requirements for NEV enterprises including R&D capability, IPR ownership etc.	Regulations of entry into industry
N/A	Standards of charging devices and energy-saving rate testing	Standardization
?	?	Holistic NEV industry plan
?	?	Technological roadmap
?	?	Complementary measures

NEV program – local implementation progress

- **Overall progress by the end of 2011:**
 - 361 NEV models produced by 75 manufacturers listed in the recommended catalogues;
 - total amount of produced and sold new-energy cars was 8368 and 8159;
 - number of NEV charging stations and charging piles was 243 and 13283.
- **Progress of participant cities has been uneven:**
 - top three cities Hangzhou, Shenzhen and Hefei promoted 1374, 2011 and 2018 NEVs;
 - Average achievement rate among the participant cities was 38%.
- **Diversified outcomes resulted from diversified driving forces and pre-conditions:**
 - fieldwork suggests that outstanding regions tend to have good industrial foundations;
 - Beijing is the capital city which needs to play a leading role in green technologies;
 - Shanghai is trying to build a holistic supply chain based on its technological advantages;
 - Hangzhou and Shenzhen are exploring practical commercial modes;
 - Changchun and Hefei aim at occupying national markets;
 - western cities are trying to grasp this opportunity to nurture NEV industries;
 - some small and medium sized cities are trying to involve in key components manufacturing;
 - cities besides the 25 are doing NEV programs in their own way... no structured knowledge yet...
- **Overall impacts:** Fairly effective in promoting stakeholder awareness, technological achievements, industrialization, human resource building, infrastructure building and standardization.

NEV IOPP case in Jinan for National Games 2009

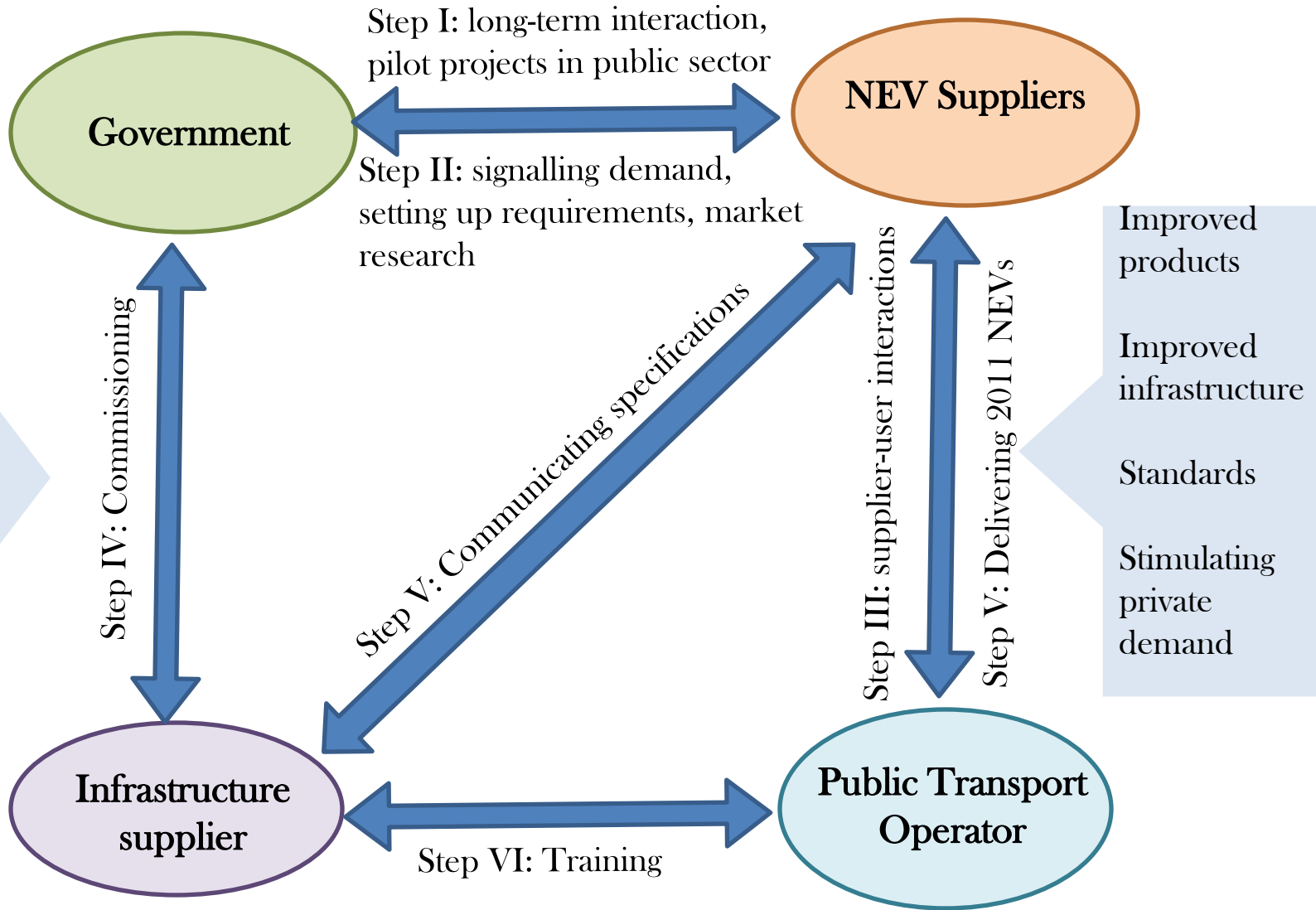


NEV IOPP case in Shenzhen for Universiade 2011

Universiade
2011

NEV
program

Promoting
local
industry



Similarities:

- Driven by ‘green themes’ in large-scale events; other examples include Beijing Olympics 2008, Shanghai EXPO 2010, Guangzhou Asian Games 2010.
- Cross-departmental administrative group to coordinate the project; directed by cross-ministry group.
- Both proved that long term cooperation between governments/operators with suppliers is a key factor affecting the contracting in China.

Differences:

- Jinan’s case was one of the earliest; high price; cautious move; Jinan now falling behind due to the lack of strong local industry - lack of motivation
- Shenzhen’s budget is unclear; no tendering process, selected suppliers based on previous communication and pilot projects - local integration or regionalism?

Common issues:

- Uncertainty of technological roadmap (government waits for firms and vice versa)
- Difficulty to mobilize private consumers (lack of infrastructure or incentives)
- Flawed framework conditions led to questionable competition environment

Discussion & Implications

- Policy implementation in China - *de facto* federalism?
Regional protectionism, 'NEV fever' and 'NEV fear' can all be explained by this.
- What about the *areas not covered* by the program...?
Fieldwork suggests some practitioners and consumers are hesitating due to lack of support.
- The building of *framework conditions* seems to be most relevant
E.g. reforming the public procurement system to protect competition - long way to go...
- *Improving capacity* for stakeholders
Especially the policy practitioners and procurers - a surprisingly huge gap that policymakers never address...
- Towards *systemic governance* of systemic innovation policies
Yes we do see the differentiation of innovation policies in China, but the use of them is still in a mechanical way. Exercise of policy cycle and policy mix perspectives is revelant.

Thank you