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The geopolitical turn of technology: towards strategic autonomy?

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Outline

- The transformation of international affairs: weaponization of interdependence
- Instruments of the geopolitics of technology
 - Case study: infrastructure influence
- Recent developments: Russia & China
- What shall we do? Suggestions for European stakeholders

The transformation of international affairs: weaponization of interdependence

- Technological advance has always been a source of state power
 - Military importance: China's decline in the 19th century as a result of technological disadvantages
 - Economic importance: British Empire and the early industrialization
 - Symbolic importance: Race to the South Pole and the moon
- US-China power struggle and technological competition
 - Defining moment: Digital transformation: criticality of new technology – penetration of society, economy, military and political sphere
 - Redefinition of interdependence in an interconnected world: from “flat world” to “weaponization of interdependence”
 - The geopolitics of connectivity: choke points & panopticon

Instruments of the geopolitics of technology

- Old instruments in a new political context
 - Primarily offensive:
 - Flow control & network power: SWIFT, prioritization of data flows
 - Sabotage & hacking (IT, networks...): Stuxnet
 - Manipulation of information: US Presidential elections 2016
 - Espionage: COREU
 - Primarily defensive:
 - Export controls including knowledge transfer: Western sanctions against Russia
 - Protection of critical infrastructure: Huawei
 - Tariffs and sanctions: US-China trade war
 - Industrial policy: EU Chips Act

Instruments of the geopolitics of technology

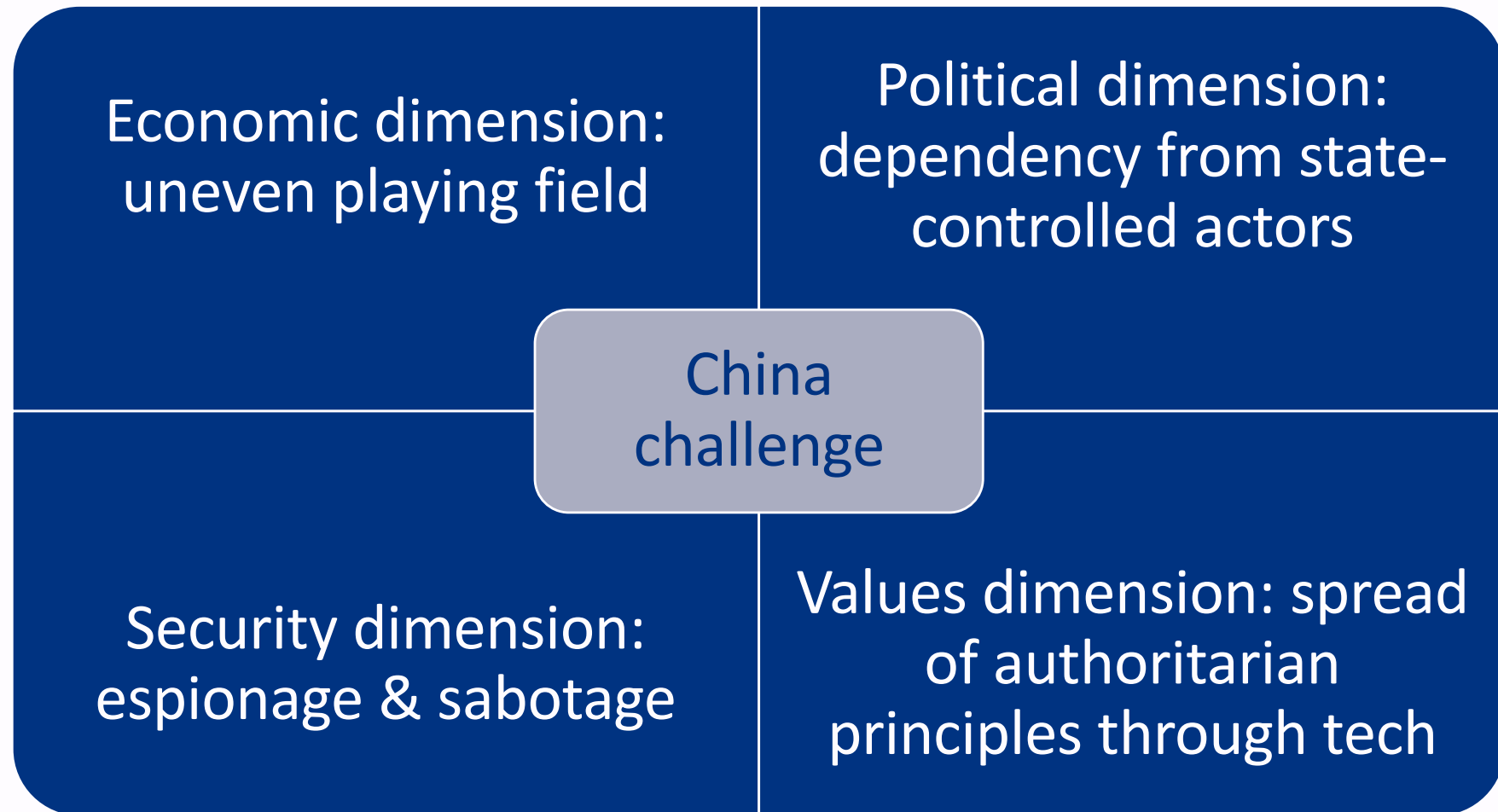
In focus: the geopolitics of infrastructure

		Stages of infrastructure development			
		Finance	Innovate and regulate	Design and construct	Own and operate
Mechanisms of infrastructure influence	Extract information (panopticon)	<i>Financial reporting prior to investments</i>	<i>5G standardization as an information source</i>	<i>Blockchain bill of lading in maritime transport</i>	<i>Port Community systems</i>
	Control/regulate access (flow control)	<i>Use of service of debt as condition for preferential access</i>	<i>U.S. support to Open RAN innovation to increase control of 5G flows</i>	<i>Kill switch in 5G infrastructure</i>	<i>Preferential treatment of shipping companies in ports</i>
	Establish dependencies (lock-in effects)	<i>Debt trap in seaport investments</i>	<i>Export of national regulation (high-speed rail standards)</i>	<i>Maintenance of 5G infrastructure by vendors</i>	<i>Redirection of freight through seaport ownership</i>

Recent developments: Russia & China

- Russia's growing technological dependence on China
 - North Koreanization of Russia
- Dependency on Western technology: the case of semiconductors
- Cyber attacks against Ukraine
- Disinformation attacks: erode trust in democracy

Recent developments: Russia & China



Recent developments: Russia & China

- Economic dimension: uneven playing field – the example of innovation
 - Harvard Business Review (2014): “Why China Can’t Innovate”
 - Fewer demand for innovation
 - Entrepreneurs less innovative
 - Worse protection of IP
 - State investment
 - Primacy of party-state over innovation
 - What did we miss?
 - Semi-protected market: let innovation in, protect local tech firms
 - Cooperation with the West: learning and stealing
 - Investment and bureaucratic support: unleashing experimentation

Recent developments: Russia & China

- Political dimension: dependency from state-controlled actors – the example of Huawei
 - Huawei's telco infrastructure market share: 27% (Q1 2021)
 - Reliance on maintenance by supplier
- Dependence from financial resources (2008-18)
 - US \$46 billion soft loans
 - US \$25 billion tax breaks
 - US \$30 billion export credits for Huawei customers
- CV analysis: linkages between security apparatus and Huawei engineers
- Party cells
- 95% of top 100 POE management has party-state linkage
- Governance structure of Huawei: Ownership does not come with control

Recent developments: Russia & China

- Security dimension: espionage and sabotage – the example of COREU
 - COREU: communication network of the Council, EU member states, permanent representations in Brussels, European Commission and General-Secretariat of the Council for foreign policy
 - Fishing attack, leakage in the Ministry of Foreign Affairs of Cyprus
 - Attribution: Area 1 & “LoveZK1980” – IT firm with linkages to the Chinese security apparatus, recruitment criteria

Recent developments: Russia & China

- The values dimension: spread of authoritarian values through tech – the example of standardization
 - Chinese growing presence in international SDOs
 - ISO TC/SC secretariats: 5% (2011) -> 8.2% (2018)
 - ITU: 1st in terms of WP, study group chairs/vice-chairs
 - 3GPP: 1st in terms of TSG/WP chairs/vice-chairs
 - 5G contributions: 22.4% (4G) -> 31.5 (5G)
 - 5G SEPs declarations: 1st with 33%
 - Wi-Fi vs. WAPI: an issue of privacy?
 - New IP: a hierarchically structured internet architecture?

What shall we do? Suggestions for European stakeholders

- Europe's reaction: (open) strategic autonomy
 - Narrative: different goals:
 - Supply chain resilience
 - Responding to criticality
 - Securing competitiveness
 - Protecting values
 - Political alliances matter
 - Three contested instruments:
 - Reshoring
 - Diversifying
 - Managing interdependencies

What shall we do? Suggestions for European stakeholders

- The value of interdisciplinary research for policy-making:
 - Political ambition meets technical feasibility
 - Understanding technological implications and ecosystems
 - Assessing the price rivals are willing to pay

Thank you!
