

**Are dated conceptions of industries a  
blockage to effective 'IP' formulation?**  
cars, steel, energy and digitalisation considered together

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# introduction

- what this paper is about
- fluidities and transformations
- challenges in impactful industries
- the steel nexus
- 'industry' as a barrier to policy

# what this paper is about

- a series of trade related shocks are hitting two major connected industries in Britain: cars and steel
- each also has a sustainability dilemma
- stepping back from the most immediate difficulties, there are fundamental questions that are relevant to strategy:
  - would reorganisation mitigate the sustainability dilemma?
  - would this dampen susceptibility to trade shocks?
  - would it be compatible with good international relations?
- and do dated conceptions of 'industries' get in the way?

# fluidities and transformations

- a growing number of approaches to the constructed world are attempting to reconceptualise how an 'economy' is imagined, appropriated and studied:
- product service systems (PSS) / United Nations Environmental Programme (UNEP)
  - used-based service models over 'manufacture and sale'
- industry 4.0
  - the internet of things / cyber-physical systems/ digital factories
- the foundational economy
  - the networks of cables, wires, pipelines, roads, railways and distribution outlets that make modern civilisation possible
- major new corporate players are also signifiers of change:
  - FAANG economy: Facebook, Apple, Amazon, Netflix, Google, etc.

# fluidities and transformations

- *fluid boundaries, connectedness and connectivity* are running themes
- to test the potential of these approaches the first of these is considered as a strategic option in reconfiguring cars and steel – together
- Product-Service-Systems (PSS):  
'an innovative strategy that shifts the centre of business from the design and sale of [physical] products alone, to the offer of product and service systems that are together able to satisfy a particular demand' (UNEP 2002)
- the PSS approach favours business models based on leasing rather than sale  
i.e. sell mobility, **not** cars (Ceschin and Vezzoli 2010)
- This is an example of a radical industry rethink – the car industry would become a branch of **service-led manufacture**

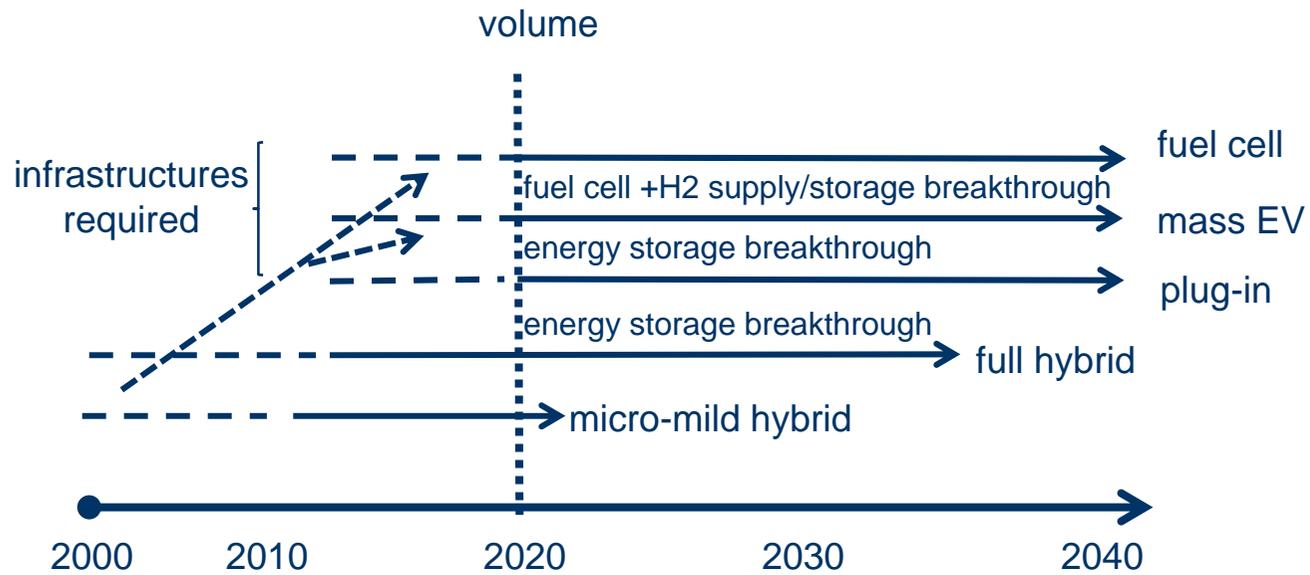
# challenges in impactful industries

- cars and steel are **impactful** industries:
  - generating income, jobs, trade ...
  - environmental degradation ... CO2 emissions ...
- industrial policy formulation biases towards the first
- consider Britain's 'sector strategy' for cars:  
'the UK automotive industry has significant opportunity as increased incomes lead to increased [worldwide] spending on transport ... Environmental drivers ... will be part of the growing economies' demand' (HMG 2012: 22)
- the assumption here (unchallenged) is that the **environment** plus **world income growth** will drive up future demand for UK car exports
- there is no sense of a trade-off between the environment and growth

# challenges in impactful industries

- this policy is not a product of sober thinking
- there are objections on the process side e.g.
  - making cars is a major source of environmental degradation
  - there are resource limits even on (allegedly) 'cleaner' technologies
- cost-cutting through adoption of energy saving measures may rebound
  - lower cost means higher production which means more emissions ...
- the existing business model for cars is to sell cars **and** parts
  - alternative car technologies may not sustain a parts market
- and there are objections on the product side e.g.
  - this class of strategy is informed by speculation about technology
    - : see next slide for the example drawn up for Britain in 2002
  - there are no risk assessments on the downside

# Figure D3: the Consensus Technology Roadmap



Source: based on NAIGT technology roadmap

# challenges in impactful industries

- suppose for argument's sake the industry was reorganised on a PSS basis:
  - industry profit centres would change
  - private car stocks could be eased out of existence and total car fleets reduced
  - the absence of a parts market would not be an obstacle to service provider commercial viability
  - risks on the downside could be more easily managed
  - service providers would have responsibility for end-of-life disposal and resource reclamation

Etc.

# the steel nexus

- taking this thought experiment further, what would this imply for an intermediate input provider like the steel industry in Britain – a high-energy supplier of the car industry
- the answer is an interesting one – most of the longer-term recommendations of a recent report by the British All Party Parliamentary Group (APPG 2017) on steel offer policy formulations that are consistent with a PSS approach:
  - **enhanced R&D on materials use**
  - **public procurements for local sourcing**
  - **supply chain compression/ digitalisation**
  - **circular economy** (60 % of scrap steel is currently exported; but Britain imports 60% of its general steel needs)
  - **distributed energy**
- the last three recommendations are hall-marks of PSS modelling

# 'industry' as a barrier to policy

- while a thought experiment, joint reorganisation of the car and steel sectors on a shared PSS basis would deliver on the fundamental points of sustainability and reduced susceptibility to shocks
- 'trade' could exploit PSS consultancy rather than a current focus on 'pushing metal'
- but are there any forums that give space for this kind of radical and interwoven discussion of policy?

# 'industry' as a barrier to policy

- after setting out details on the limited practicalities of the extant export-led strategies for long-term development of industries like cars and steel, this paper considers why the conception of an 'industry' may itself be an issue
- standard industrial classifications driving national sectoral data
- consultative bodies based on trade associations without cross-sectoral representation e.g. the Automotive Council is about 'cars'
- institutionalised habits of thought about the imperative of achieving growth through the expansion of production for export over use- and stability-oriented policy modelling
- fear of adverse public or media reactions – 'the fear of being thought ridiculous'
- for all of these reasons, if the test of Piore and Sabel's (1984) 'industrial divide' were applied, the industrial policy positioning in Britain remains one of ex post reactions rather than policy visions and leadership rooted in a willingness to explore fundamental transformations

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