

A Concept Diagram:

The Role of Design and Designers in Socio-Technical Transitions

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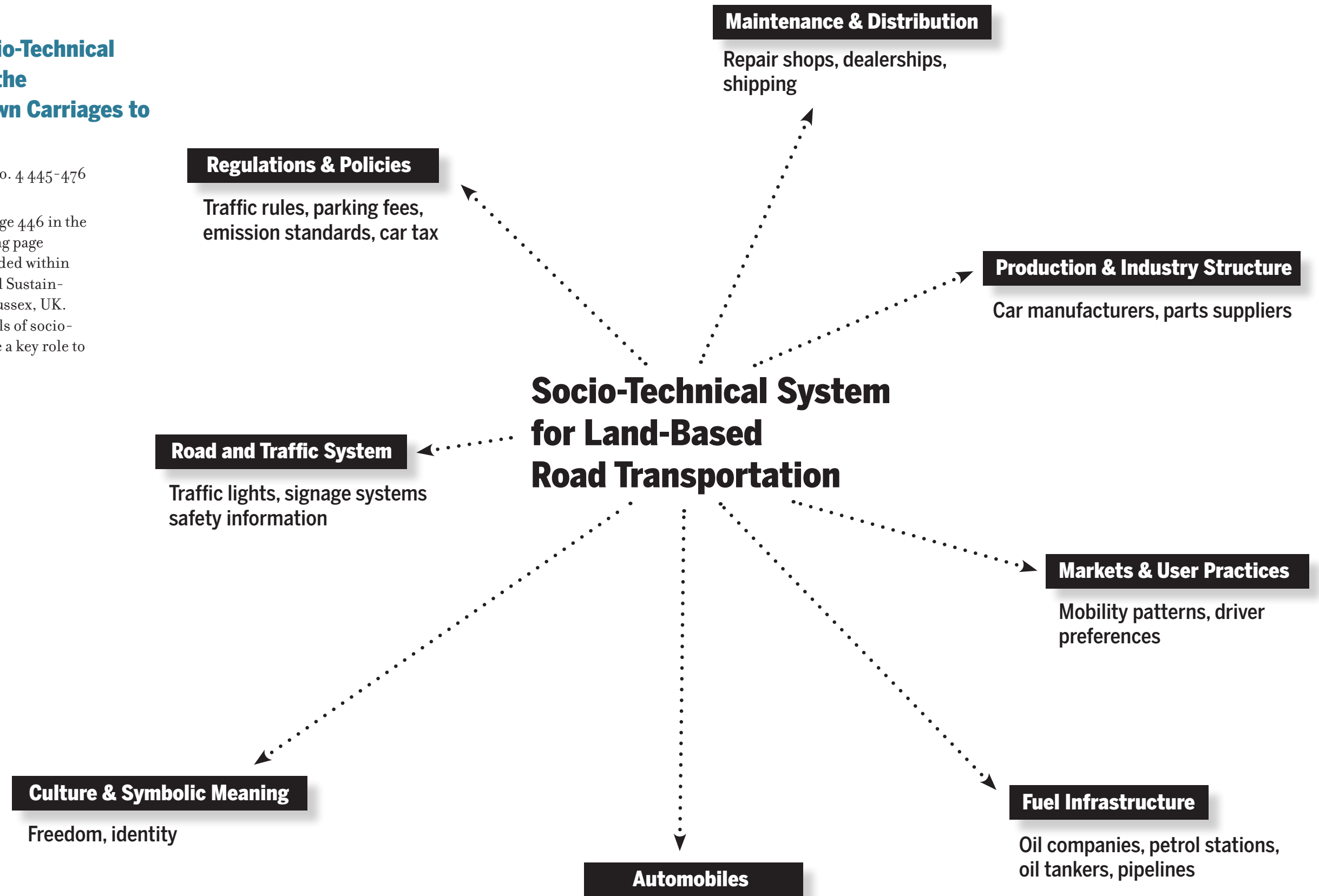
Based upon F.W. Geels, 2005:

“The Dynamics of Transitions in Socio-Technical Systems: A Multi-Level Analysis of the Transition Pathway from Horse-drawn Carriages to Automobiles (1860-1930)”

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The diagram at right is based upon Geels, figure 1, page 446 in the above citation. The diagram and table on the following page shows how design and its sub-disciplines are embedded within socio-technical systems. Presented at the 6th Annual Sustainability Transitions Conference (IST) August, 2015, Sussex, UK. The authors argue that design is found within all levels of socio-technical systems and that design and designers have a key role to play in the design of sustainability transitions.

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SYSTEM CATEGORIES	DESIGNED ARTIFACTS/PROCESSES EMBEDDED WITHIN THE SYSTEM	DESIGN DISCIPLINES INVOLVED	
Regulations and Policies (e.g. traffic rules, parking fees, emission standards, car tax)	Parking meters; parking ticket machines; user interfaces for ticket machines; policy for emissions; process for checking emissions; emissions testing machines; interface for testing machines; parking regulations; driving regulations; tax policy for automobiles; policy for insuring automobiles; communication materials for all of the above in print, digital and broadcast media;	<ul style="list-style-type: none"> • Policy design • Experience design • Interaction/interface design • Product design • Environments design 	<ul style="list-style-type: none"> • Communication design • Information design • Service design • User research
Road & Traffic System (e.g. lights, signs etc.)	Network of motorways; guard rails; rest stops; waste containers; signage systems; signs; sign symbols; sign typography; traffic lights; traffic light interfaces and operating systems; safety lights; mobile hazard lights; safety fences & bollards; security cameras; computer interfaces for monitoring computer cameras; highway markers & symbols (crosswalks, center lines etc.); highway meridians; freeway entrance/exits/roundabouts; local, regional, national maps of highways and roads in print and digital media;	<ul style="list-style-type: none"> • Policy design • Urban design • Interaction/interface design • Product design • Wayfinding & signage design 	<ul style="list-style-type: none"> • Communication design • Service design • Letterfrom design • Information design • User research
Culture & Symbolic Meaning (e.g. freedom, identity)	Brand narrative & strategy; brand identity system; advertising and marketing in print, product, digital and broadcast media; logo & symbols; branded clothing & accessories; branded events; retail and exhibition displays; brand guidelines;	<ul style="list-style-type: none"> • Brand strategy & identity design • Experience design • Interaction/interface design • Product design 	<ul style="list-style-type: none"> • Communication design • Fashion design • Advertising & marketing • Exhibition design
Fuel Infrastructure (e.g. oil companies)	Petrol stations (interior/exterior); petrol pumps; user interface for fuel pumps; signage system for petrol station; brand identity for signage & products; credit card/payment system; tanker trucks; delivery system for fuel at point of sale; petrol station experience; oil tanker trucks; oil storage systems; refinery stations & equipment; oil tanker ships; oil pipelines; identity/advertising/marketing for oil companies in print/digital/broadcaset media;	<ul style="list-style-type: none"> • Environments design • Interior design • Interaction/interface design • Product design • Wayfinding & signage design 	<ul style="list-style-type: none"> • Communication design • Service & experience design • Brand design • Transport design • User research
Markets & User Practices (e.g. mobility patterns, driver preferences)	Targeted advertising and marketing in print, digital, broadcast and point of sale media; research reports and graphic representations; surveys and other methods for obtaining user data and preferences;	<ul style="list-style-type: none"> • User/design research • Communication design • Information design • Service design • Experience design 	<ul style="list-style-type: none"> • Brand & retail design • Advertising & marketing
Production System & Industry Structure (e.g. car manufacturers, suppliers, distributors)	Automobiles; factories, assembly lines/process; materials; parts; automotive software for design; owners & parts manuals; software for inventory and interaction with sub-contractors/suppliers; signage & wayfinding; billing systems in print/digital; employee benefits/retirement plans w/communications & interfaces; internal corporate strategies/communications/policies;	<ul style="list-style-type: none"> • Policy design • Experience design • Interaction/interface design • Product/automotive design • Environments design 	<ul style="list-style-type: none"> • Communication design • Information design • Service design • User research • Design strategy
Maintenance & Distribution Network (e.g. repair shops, dealers)	Dealerships (exterior/interior); signage & wayfinding; brand presence in digital, print, broadcast, retail media; repair/garage exterior and interiors; automotive tools and testing devices; transport vehicles for distribution (land, air, sea); advertising/brand/marketing for dealers, automotive repair businesses and parts distributors in print/digital/broadcast and point of sale media;	<ul style="list-style-type: none"> • Architecture & interior design • Advertising/marketing retail design • Brand strategy & design • Transport design 	<ul style="list-style-type: none"> • Product design • Communication design • Service design • Information design • User research