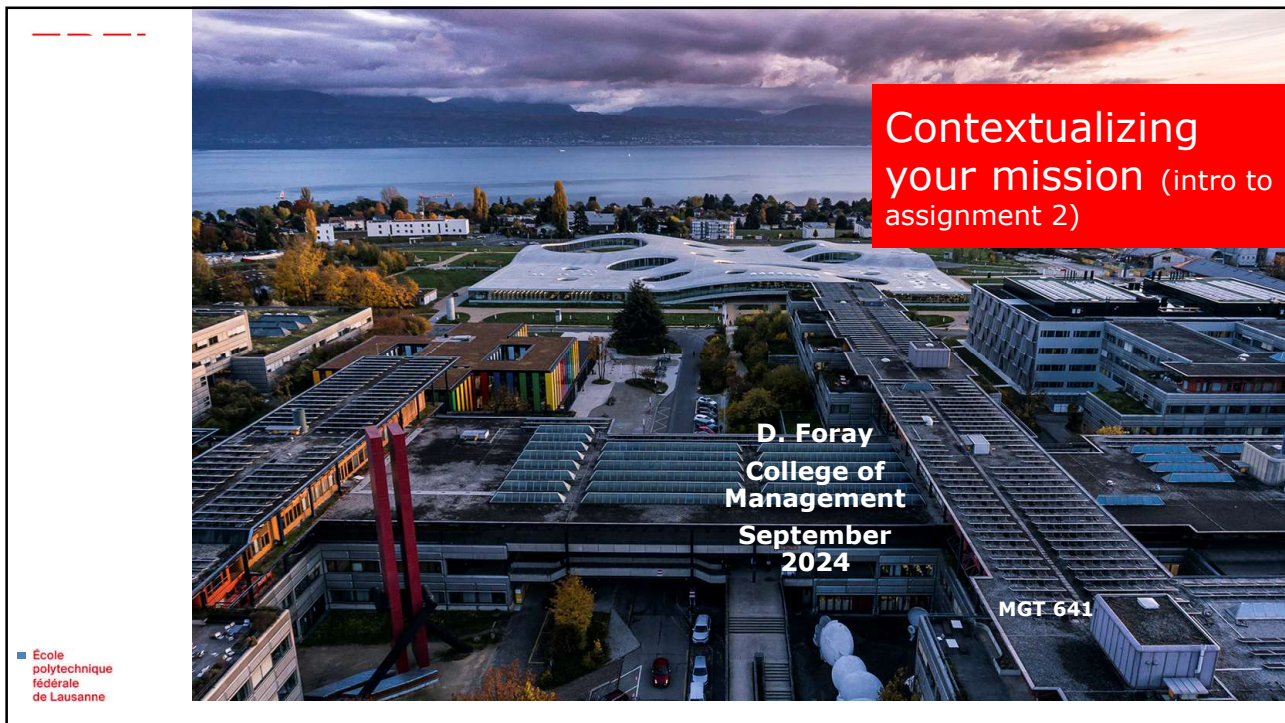




Teams	Mission
Cedric	An efficient and sufficient energy transition (Switzerland)
Ray	Decarbonization of the cement industry (global)
Massimo	Deployment of commercial nuclear fusion energy (global)
Abdurahman	Increasing sustainability of passenger aviation (global, EU?)
Jacopo	
Giulia	
Anupam	Promoting sustainable mobility solution (Switzerland)
Noémie	
Maja	
Vasileios	Efficient protection of traditional settlements that do not hold a monumental status (CH, Greece)
Aasta	Contraception and family planning in the South
Tania	
Ilia	Fighting antimicrobial resistance in the EU
Remo	
Ana	
Kristina	Improving soil health (Switzerland)
Geoffroy	
Simge	Enhancing accessibility in science communication
Francesca	
Elena	Reshaping farming industry with sustainable alternatives
Giorgio	
Eduardo	
Ekansh	Exploring sustainable consumption and production – solutions to tackle the challenge of fast-fashion
Junrui	Job substitution by applied AI in China

- Your mission can be characterized by *how the perceived problem and the identified solutions are widely accepted*
- **Wicked** problems are societal problems that are complex, unpredictable, and have poorly defined boundaries, they lack clarity in both aims and solutions (different from a tame problems: you know how to make a cake for 6 persons you can calculate what do you need to make it for 60 people – this is a tame problem that can be solved by choosing and applying the correct algorithm)
- Proposed solutions **diverge** between stakeholders or they are multi-dimensional and have no clear outcomes (e.g. rebound effects) and it is difficult to agree on any priority
- The importance of a **narrative**

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Problem side

Contestation – refers to the degree of normativity related to an issue – diverging claims, values and framings, inherent conflicts of interest resulting from social pluralism and stakeholder divergence

Complexity – multi-scalar and multi-dimensional nature of the problem

Uncertainty – lack of knowledge, limited availability of evidence related to risks & costs of actions, non-actions

Solution side

Contestation – feasibility, opportunities and threats of innovation which are supported

Complexity – new technologies/innovations need to be combined and aligned with organizations, social practices, etc..

Uncertainty – lack of knowledge on feasibility of solutions or there are multiple choices – no clear superiority

Higher degree of contestation, complexity and uncertainty of..

..the problem- the higher its wickedness and the more difficult might it be for policy to address the mission

..the solution – the more diverging the views on solution's value

	Diverging views on the problem	Converging views on the problem
Diverging views on solutions	Disorientation	Difficulties to agree on solutions
Converging views on solutions	Difficulties to agree on problems	Alignment

Sustainable agriculture able to feed the world



- Disorientation
- Problems divergence
 - how to keep a productivist model to feed the world and get a sustainable trajectory of productivity growth?
 - how to get rid off the productivist model (sustainability) while securing food access for all?
- Solutions divergence
 - belief in large-scale agriculture, based on scientific progress and high tech knowledge to deliver high amounts and high quality within environmental constraints (case in the NL)
 - belief in small scale organic farming practices, local systems, with low inputs of pesticides and fertilizer.

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Smoking bans



- Alignment
- Problem accepted by society – six million annual death worldwide – the problem was contested and unclear for a long time – role of the tobacco industry to slow down social awareness but today: « *the debate is over and the science is clear* »
- Solution accepted by society – the range of solutions increased : tax, control advertisement, initiatives to ban smoking in specific places (public, school, etc..) – in spite of many innovations from the industry (better filters, cleaner tobacco, e-cigarettes) – smoking ban have become increasingly accepted as central part of solution-range –
- At some points policy is no longer needed – large scale behavioral tipping happened and smoking ban becomes unnecessary – every one has internalized the new social norm
- But alignment doesn't mean the problem is solved (issue of the industry looking for substitutes)

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Wind energy (the Netherlands)



- Alignment
- Problem accepted by society
 - declining fossil fuel reserves,
 - foreign dependencies,
 - emerging awareness on climate change
- Solutions accepted
 - first period: significant uncertainties on feasibility – development of onshore wind turbines (engineering optimism!) – but contestation by local opposition and by NGOs
 - as the problem of climate change dramatically increased, solution convergence towards offshore wind energy platforms

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Autonomous driving



- Difficulties to agree on problem
- Solutions convergence – high tech involving machine learning and robotics
- But for what kind of problem?
 - make transportation more sustainable
 - productivity increase
 - comfort, security
 - higher capacity of highways will reduce congestion
 - problems of an aging society
 - business model problems of ride sharing
- The solution is still looking for societal problems to link in order to increase its legitimacy – we miss the narrative

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Obesity



- Difficulty to agree on solutions
- The problem is accepted
 - one of the top three social burdens (after smoking and armed violence)
 - shift from seeing obesity as a personal matter to seeing obesity as a major societal issue
- Solutions divergence
 - individualized, science-based treatment based on drugs not sufficient,
 - needs for coordinated and cross-sectional actions beyond the health sector, including agriculture, manufacturing and retailing (for changing product ingredients, pricing, portions), education, media and culture (building knowledge and awareness), transportation and urban planning (for car free and physical activity based mobility) or economic policies (taxations and subsidies)
 - 74 types of interventions were identified in 18 areas but evidence on how well each of them works is scarce

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Higher degree of contestation, complexity and uncertainty of..

..the problem- the higher its wickedness and the more difficult might it be for policy to address the mission

..the solution – the more diverging the views on solution's value

	Diverging views on the problem	Converging views on the problem
Diverging views on solutions	Disorientation Sustainable agriculture	Difficulties to agree on solutions Obesity , climate, decarbonizing aviation
Converging views on solutions	Difficulties to agree on problems Self-driving car	Alignment (innovators, firms, investors, consumers) Smoking ban, wind energy (NL)

	Diverging views on the problem	Converging views on the problem
Diverging views on solutions	<i>Disorientation</i>	Problem in search of a solution
Converging views on solutions	Solution in search of a problem	<i>Alignment</i>

Different pathways for mission policies in the problem solution-space

Your task

How would you characterize the problem?
Need for evidence and data

How would you characterize solutions?

Contextualization

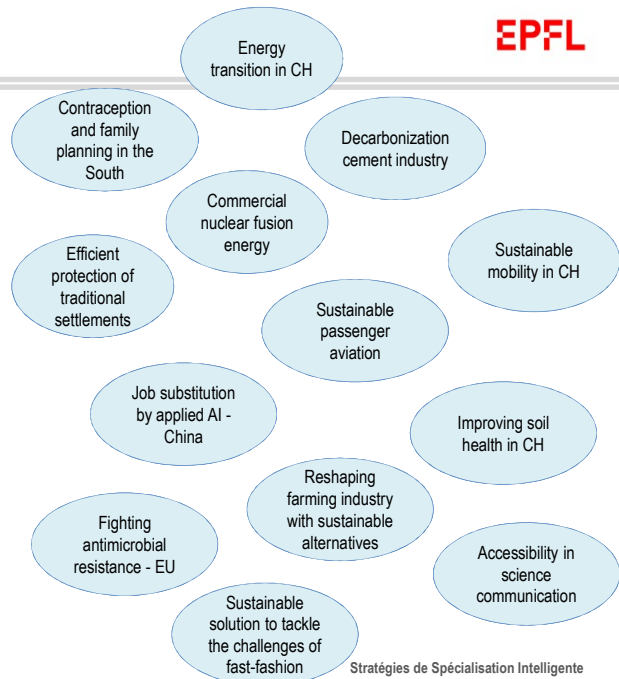
How would you characterize the policy pathway?

Solution in search of a problem : creating a broadly legitimized and defined societal problem framing

Problem in search of a solution: solution push approach centred around the development of innovations

Disorientation: follows a logic of balancing problem and solution wickedness at the same time when the problems are wicked and there are no obvious solutions

Alignment



Assignment 2: “mission’s analysis” -



- Is the problem clear for and accepted by the whole society (or not?)
 - Data and evidence on the problem
 - Contextualization
- Are the emerging solutions accepted by most people? Or difficulty to agree on solutions
 - Contextualization - winners and losers, multiple solutions, interactions between solutions conducing to rebound effects, etc..
- Construct the policy pathway
 - Prepare a max of 4 slides (title-problem-solutions-policy pathway)
 - Deadline for submission – Tuesday 24th - midnight
 - Discussion in class – Thursday 26th
 - Materials to support your work posted week 4 – short guidance document and recommended reading 5 (sections 3 to 6)

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Future assignment: ideas!



- Repairing markets: fix externalities (tax, regulation)
- Promoting technological innovations
- Influencing large-scale behavioral tipping
- Orchestrating and funding all these changes
- More...?

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