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Foresight to Develop and Support a Mission - The Case of the European Mission on “Conquering Cancer - Mission Possible”

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Abstract

In 2019, the European Commission set up five so-called Mission Boards to define, refine and strategize missions for future research and innovation. The missions were supposed to be demand-driven and broad enough to develop motivation to act as guardrails for new research programmatic. One of the Mission Boards was supposed to develop the mission on fighting “cancer“. To open up the view for the long-term, a Foresight team from the “Foresight on Demand “(FOD) projects accompanied the mission defining process. In the paper we discuss what role Foresight can play for taking on a key function of reflexivity in the governance of STI to give input to significant systemic change. The Foresight part described here in three approaches marked the start of the process, the Mission Board went on with consultations and several participative activities.

Keywords

Foresight, European Commission, Cancer

Introduction

The last decade of policy making in and for science, technology and innovation (STI) is characterized in large parts by the discussion on directionality (Mazzucato 2018; Schot & Kanger 2018). It stresses the importance of the “state back in” (Skocpol 1985) and stresses the role of the public sector for formulating priorities and shaping public policies towards objectives as defined for example in the Sustainable Development Goals for achieving environmental stability and social inclusion. It is remarkable that this coordinating power is not only ascribed to the nation state but also to confederations of states such as the United Nations or the European Union. For the latter, the directionality approach finds its manifestations in policies such as the announcement of concerted efforts to pursue the “Green Deal” and the EU wide digitalisation. Both are issues that directly affect STI Policy making.

Another case in point and even more concrete is the dedication for five selected “Missions” at EU level (European Commission, 2020b). The Mission approach is a reaction of STI policy makers and experts to the failure of recent market economy and policy strategy to cope with the challenges lying ahead of us, national as well as global. Missions are already formulating a kind of direction, are supposed to be challenge- and demand-driven and are often close to futures that are desirable (means: close to visions, but in a broader and more operable sense). There are many examples since

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the turn of the millennium that show how conventional approaches were not even able to anticipate change, nor were they prepared for properly coping with issues such as migration, climate change, scarcity of resources, populism, fake news, not to mention the Covid-19 crisis, even though there were many signs pointing to these challenges before they became unmistakable. Mission-orientation is also interpreted as a reaction to the “lack of holistic strategic orientation and policy co-ordination, and fragmented policy mixes” (Larrue 2021). The mission-oriented approach “looks at the grand challenges facing us in a radically new way, arguing that we must rethink the capacities and role of government within the economy and society, and above all recover a sense of public purpose.” (Mazzucato 2021).

It was inspired by the Apollo “Man on the moon”-Mission of the Kennedy administration in the 1960s. This ambition was of course much more motivated by the cold war ideology and less by strategies to advance in science and technology, not to mention solving societal problems. The design and implementation of mission-oriented innovation policies in the EU context points to required changes from societal, ecological and economic perspectives.

At EU and national level (EU Member States and beyond), several policies are already underway in the STI domain that could be characterized as “mission-oriented”. Their commonalities comprise what Larrue (2021) calls “consistent and integrated arrangements that allow strategic orientation (co-creation of an agenda for addressing the challenge), holistic policy co-ordination (across policy silos) and integrated implementation (a policy mix of interventions covering all relevant needs).” While these characteristics are more obvious for national mission orientations, policies at EU level are rather fuzzy. However, what would qualify STI policy as mission-oriented apart from a conventional approach is a dedicated governance structure and mechanisms for implementation. Thus, a research programme aiming at achieving specific scientific goals would need to include formal linkages with instruments for innovation at the cross-roads of other policy domains, market structures and societal institutions.

Role of Foresight

Objectives to be achieved with mission-oriented policy making generally require systemic change. It is a kind of change that calls into question policies, processes, structures and actors so far unable to cope with pressing societal, ecological and economic challenges. In this context of systemic change, some experts see Foresight as taking on the key function of reflexivity in the governance of science, technology and innovation. This reflexivity is central to induce systemic change. Foresight presents an opportunity to reconsider the governance of STI policy in the long-term view, out of the box, and to anticipate new processes such as co-creation, cutting across formerly separated policy silos and new policy mixes for integrated implementation. “Foresight as reflexive practice has a particular role to play in aligning future orientations, thus reducing uncertainty, complexity and ambiguity for all actors involved” (Kastrinos & Weber, 2020). Against this background, we can conclude that mission-oriented STI policy making guided by Foresight can be the prerequisite towards systemic change in particular STI fields.

An interesting bifurcation of the mission-orientation at EU STI policy level are the so-called “Mission Boards”. In 2019, the European Commission set up five Mission Boards to define, refine and strategize missions for future research and innovation. The missions were supposed to be demand-driven and broad enough to develop motivation to act as guardrails for new research programmatic. One of the Mission Boards was supposed to develop the mission on beating

“cancer“(European Commission 2020a, 2020c). The other four Mission Boards were dedicated to adapting to climate change, protecting our oceans, living in greener cities and ensuring soil health and food. (European Commission, 2021)

To open up the view for the long-term, a Foresight team from the “Foresight on Demand“ projects accompanied each mission-defining process. The critical question in Foresight is always if the results are useful, if they are used, but also if they create a kind of momentum for activities and the process itself.

In their work, the project team had the ambition to evoke this motivation and bring the members of the Mission Board on Cancer to integrated, joint discussions instead of accompanying a loose group of experts working on their own and bringing in their expertise via papers - as the usual business of expert committees seems to be. In this paper, we especially investigate the question if and how a co-creation process supported the agenda-setting for addressing the challenges to fight cancer, if and how a holistic policy co-ordination process across policy silos was anticipated and what kind of measures were suggested for an integrated implementation (policy mix).

What might have contributed to the fuzziness and disorientation of other Mission Board supporting Foresight projects turned out to be an ideal space for creativity in the case of the Mission Board on Cancer. The absence of a rigid structure for the accompanying Foresight process and the openness of the individual board members, including their chair and vice chair served as the starting ground to integrate the FOD team and consent to an operational agenda. A contributing factor for the co-creation process was the transdisciplinarity of the Mission Board itself. Members of the group had diverging professional backgrounds, representing the medical field in research, practice and policy making, but also patient groups, media, pharma industry and other not-for-profit societal groups. These people had to learn to cooperate and to integrate their different professional methodological backgrounds as well as their disciplinary jargons. The Foresight process provided a room for them to change perspectives - without having to defend their views as the future is uncertain so that every view with good arguments can be weighted as interesting input. Although the co-creation process was exclusively with Mission Board members, it fulfilled ideal preconditions of a participatory Foresight process in the sense that all participants were able to bring in their specific knowledge, exchange, ideas, concerns and anticipations and be open to learn from each other, take new insights home, and most of all: contribute to recommendations for beating cancer in the context of a mission-oriented STI policy approach.

The Foresight part in three approaches marked the start of the process, the Mission Board went on with consultations and several participative activities.

The Process

First Approach: Scoping of trends & drivers for cancer

As a starting point, a scoping and scanning study was conducted in order to provide an overview of relevant trends, drivers, developments and challenges influencing the three focus areas chosen: (1) the joint understanding of cancer, future approaches to (2) prevent, (3) diagnose and treat cancer, and finally (4) provide support for the survivors (Giesecke, Lipponen, Nooijen, Cuhls, Hutka, de Jongh, Wasserbacher & Petrosova, 2020). The overview study pointed to a number of pressing issues and trends. For example, in terms of medical innovation, both through technological and social advances, we are able to identify more and more carcinogenic substances and behaviours,

which at the same time enables great progress in understanding the causes of cancer. This also includes cancer-inducing factors outside the health sector, such as agriculture, nutrition, the environment and urban developments. It also requires addressing the (economic) burden for cancer on our health systems and the difficulties of national programmes to cope with this. Finally, as cancer is a societal as well as a personal issue, coping strategies are very much dependent on the socio-economic context. This means that across the EU there are fundamental differences within and between countries, among others in terms of the quality of their health systems and the accessibility for patients of proper prevention, diagnosis and treatment, as well as care for survivors.

Second Approach: Scenarios on the future of cancer prevention, diagnostics and treatment, and survivorship

In an earlier EU-funded project entitled FRESHER - FoResight and Modelling for European HEalth Policy and Regulation (Giesecke & Wepner, 2017) - a number of scenarios were developed in order to address effectively the burden of non-communicable diseases up to 2050. In this process, alternative developments and so-called influencing factors as areas that are important drivers for health systems, were identified and used for an extensive scenario-building process. As these scenarios already framed the world of a future health system, we re-used the existing scenarios (Giesecke, Lipponen, de Jongh, Cuhls & Wasserbacher, 2020c). As part of the study for the Cancer Mission Board, we adapted two of these scenarios with the aim of tailoring them specifically to possible futures in the fight against cancer. The two future health scenarios were discussed - factor by factor - in a dedicated workshop with members of the Mission Board. Then, the discussion results were summarized and integrated into two new scenarios framing future worlds of cancer research.

Scenario 1, titled “We will health you”, presents a society, in which the main priority is to guarantee access to adequate healthcare for all European citizens in a timely manner in a growth-oriented society. For this purpose, governments and the private sector collaborate closely to maintain a healthy workforce and to keep non-communicable diseases under control, with the aim of ensuring the continuation of economic productivity as well as the sustainability of the healthcare systems, among others also making use of big data, public and private investments to influence citizens’ behaviour towards healthy lifestyles effectively. In this scenario, promising medical innovations, such as breakthroughs in personalised prevention and treatment, are all widely accessible and affordable. This is largely due to a strong governmental top-down policy, including on big data and on drug pricing, having affected the fight against cancer dramatically. Hence, in this scenario the rich are not necessarily better off. At the same time this progress leads to acceptance of paternalistic measures and additional surveillance (mutually and by the state).

In the second scenario, “The rich get healthier” a picture of a European future is presented that is far more fragmented, with very uneven distributions of wealth and health across and within European countries. In this same scenario, the EU consists of a smaller set of (16) core Member States that have considerable wealth and claim to share the same values, i.e., green growth, technological progress, rollback of the state and the democratic principle of separation of powers. Overall health provision has improved, among others because public hospitals and general practitioners (GPs) have become part of much tighter and more efficient network governance by state health authorities, and also with better provision for diagnostic and screening facilities. However, this is generally not affordable for the poorer part of society because of the high burden for them of out-of-pocket payments. Hence, only patients with private insurance benefit from the

progress, so that there is more cancer screening among the better-off and access to the newest and most expensive medicines is limited to those in employment or who have an additional health plan or special insurance. EU-wide campaigning to halt carcinogenic emissions has improved the general health of the population and reduced the rate of cancer incidence among younger people. There are fewer dangerous emissions from traffic, heating, industry and agriculture in this scenario. Most importantly, healthy lifestyles are fashionable. Wealthy people take part in sport, do not smoke or consume alcohol, while unhealthy lifestyles are concentrated in the poorest section of population, also giving rise to co-morbidities from lifestyle diseases such as diabetes. At the same time, in conjunction with the ageing population, there is still an increase in the total number of cancer patients. As the average age of citizens keeps on rising, one in three persons will be diagnosed with cancer over the course of their life. As certain expensive new medicines can only prolong life to a limited extent, while not necessarily improving the quality of life, this has also ignited a public debate over the value of life prolongation and health investments.

Third Approach: Roadmap of key events and milestones

As a last activity, Board members participated in a set of online sessions in which they were asked to assume the role of certain stakeholders, such as cancer survivors, a patient organisation, Members of the European Parliament group against cancer, a large pharmaceutical company, and general practitioners. From these perspectives, the participants formulated crucial events and milestones to take place in the future on the path to fight cancer in the European Union (Giesecke, Lipponen, de Jongh, Cuhls & Wasserbacher, 2020a). These are clustered into three separate roadmaps (see Figure 1):

Roadmap 1 summarises a number of actions as part of a successful pathway in terms of prevention, among others including the development of personalised risk assessment tools, contributing to personalised risk assessments for all cancers, to awareness campaigns on healthy lifestyles and to banning or else increasing taxes on unhealthy products. The measures recommended very much qualify as mission-oriented policy mixes because they stress the need for complementarity across policy domains. Beating cancer effectively does not mean that measures are located in the domain of health policy or research policy alone. If policy really wants to fight cancer, concerted actions of different policy arenas are necessary. They also include efforts from justice departments (at EU and MS levels), for example. Further, a directed policy mix (not only loose policy combinations) is needed to create complementarity. Thus, incentives for research directions are equally important as legal measures (such as taxes and regulation on advertisement).

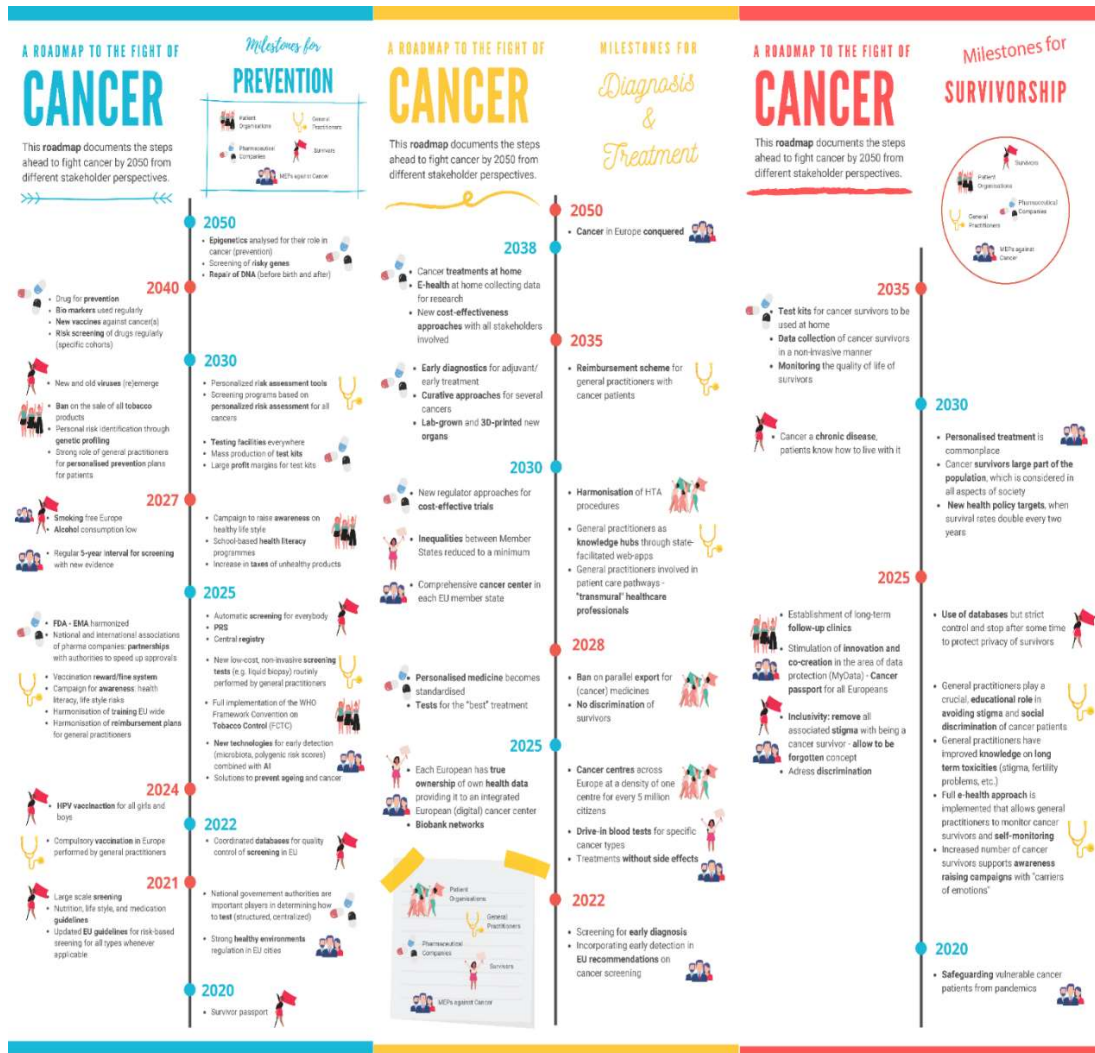


Fig 2: Three Roadmaps to the Fight of Cancer

Roadmap 2 addresses diagnosis and treatment. Actions among others include new technologies for early detection and new care models, including more cancer treatments at home, and the creation of Comprehensive Cancer Infrastructures as well as Patient Care Pathways, with the involvement of general practitioners as ‘transmural’ healthcare professionals. Here again, similar to roadmap 1, we see the necessity for policy mixes as well activities across silos. Setting up trans-European infrastructures in a new EU flagship initiative is a cross-cutting challenge for EU and MS STI policy.

Roadmap 3 goes into the steps towards strengthening survivorship, among others by monitoring the quality of life of cancer survivors, including the use of non-invasive forms of data collection,

the co-creation of cancer passports for all citizens and setting up educational programmes (under the new foreseen Horizon Europe Mission on Cancer). New ways of documentation and data collection point to holistic policy co-ordination and integrated implementation, demanding the cooperation of different policy domains and a mix of different policy instruments both at EU and MS levels (see also Ravets, 2020).

Outcomes and Impact on transformation

As we can see from the examples given in the three approaches rooted in Foresight, mission-oriented policy making was at centre stage of the Cancer Mission Board activity and generated some noteworthy results. To develop new demand-driven missions is a rather complex task and needs to involve different stakeholders but has to find its starting point in identifying the potential paths ahead. In the case of the Mission on Cancer, it was clear from the beginning that the topic as such is important. But the guardrails, the areas to be addressed and upcoming new developments that transform the field and also society and the health system had to be framed beforehand. This was supported by a Foresight activity with a rather long-term view. The Mission Board activities can be ascribed as complex processes for the co-creation and refinement of the final Mission and its policy recommendations. The Foresight approach accompanied and structured this co-creation process to a certain degree up to the agenda-setting. Foresight can be an important cornerstone for structuring and guarding the development of Mission-oriented policies.

It also means that the outcomes of the study described are not set in stone but are mostly intended to support further refinement of the Mission outline. They are rather work in progress - with emphasis on progress. Nevertheless, with the public announcement of the EC's Beating Cancer Plan (European Commission, 2021) it became clear, that many issues discussed and formulated by the Mission Board within the Foresight exercise have already been taken up. The infographic of the EC's beating cancer plan resembles the format of the roadmaps developed in the Mission Board activities, and similarities can also be observed regarding content. The roadmap for prevention proposed, for example, the survivor passport, which is reflected in the EC's Beating Cancer Plan as a flagship initiative aimed at enabling a better life for cancer patients and survivors, including the 'Cancer Survivor Smart-Card' as well as the 'European Cancer Patient Digital Centre' supporting the exchange of patients' data and monitoring of survivors' health condition.

In the area of diagnosis and treatment, it was suggested to monitor and reduce the inequalities between European Member States. The EC's Beating Cancer Plan mirrors this idea and demands the mapping of such inequalities by establishing a 'Cancer Inequalities Registry' as another flagship initiative. In relation to survivorship the roadmap asked for more inclusivity meaning that there should not be any stigma for cancer survivors; they should not be discriminated in any way in their further life. In the EC's Beating Cancer plan (European Commission, 2021), these issues are addressed in terms of financial services and the introduction of a Code of Conduct. Several strategies and directives to manage survivors' return to work and to ensure a work-life-balance for survivors' parents and carers are mentioned.

As we can learn from the above, Foresight is an appropriate instrument to support and accompany mission-oriented STI policy making, and in this specific case, the work of the Mission Boards. The reflexivity momentum inherent to the Foresight process provided sufficient encouragement to the group to think boldly about systemic change. The Mission Board on Cancer embraced the inputs from the Foresight team and process to make this cooperation a success story.

One crucial factor for this fruitful cooperation was the formation of a dedicated small Foresight unit within the Mission Board that kept regular and close contact with the FOD team and ensured that the information on progress, challenges and alternative pathways could flow into both directions. This ensured also that the entire Mission Board on Cancer got a sense of ownership of the results of the Foresight process.

Conclusions

Missions and setting up Mission Boards are new instruments for STI policy. The European Commission is experimenting here, bringing in different actors of the innovation system and trying different methods. It is for the first time, that Foresight is brought in prominently to start with trends and new development identification for framing the environment of one of the new missions and for fostering structured discussions among the experts of the Mission Board.

This had pros and cons. The overview was not very detailed and did not dig very deep into the different issues but gave the experts who brought in this specific expertise a joint frame for summarizing and strategy-building. The scenarios highlighted broader socio-technological dimensions that fostered more unconventional debates and perspectives, e.g. discussions on ethical dimensions of future emerging technologies requiring vast and global health data exchange. The roadmap approach entailed the need to assess the temporal plausibility of various milestones and to illuminate the mission in terms of its transformative potential with a strategic dimension towards a real transition.

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