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# Seven reasons why mission-oriented innovation policies seldom work in practice

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## 1 | INTRODUCTION

Large-scale government programmes and centrally directed industrial policies to address well-defined societal goals – mission-oriented innovation policies (hereafter referred to as ‘missions’) – are now prominent on many governments’ agendas. This new-found enthusiasm that a ‘visible hand’ should – or perhaps even must – drive the economy forward has, until recently, escaped significant critical scrutiny. There is a dearth of academic studies examining how, when and why such missions often risk failure.

In 2022, a first volume reviewing this innovation strategy was published (Wennberg & Sandström, 2022). The contributions in this volume have attracted considerable attention, received a positive response, and been downloaded 230,000 times. The great interest in the contributions – and the further heightened interest in missions among politicians, authorities, opinion leaders and researchers – led us to initiate a follow-up with more in-depth theoretical and empirical contributions plus a number of contributions showing alternative approaches to missions to solve important societal problems (Henrekson et al., 2024a).

The empirical part of the new collection contains three detailed case studies of failed missions, covering (a) the US attempt to eradicate homelessness, (b) foreign aid and nation-building, and (c) the Brazilian government’s attempt to create a domestic shipbuilding industry. In addition, the book includes a closer examination of the empirical statements – for example,

about the emergence of the internet or the defense industrial complex around the American Defense Advanced Research Projects Agency (DARPA) – that are often invoked to justify missions (Yerger, 2024a, 2024b), and also a review of 49 other missions (Batbaatar et al., 2024), as well as a survey of how government agencies use evaluations of innovation policy (Björnemalm et al., 2024). The empirical part ends with a brief discussion of three other missions that did not meet expectations or whose usual interpretation can be questioned (US President Nixon’s quest to eradicate cancer, the US attempt to increase homeownership, and the Swedish Million Homes Program).

We identify seven reasons why these missions rarely work in practice:

1. Missions cannot solve ‘wicked’ problems.
2. Politicians and government agencies are not exempt from self-interest.
3. Decision-makers lack sufficient information to design missions appropriately.
4. Missions are subject to rent seeking and regulatory capture.
5. Missions distort competition.
6. Government support distorts incentives and creates moral hazard.
7. Opportunity costs are ignored.

In section 2 we discuss these conclusions in more detail. Many of the conclusions are related to each other and are partly overlapping. For a more detailed discussion and background we refer to the collection, which is freely downloadable (Henrekson et al., 2024a).<sup>1</sup>

## **2 | WHY MISSIONS RARELY WORK**

### **2.1 | Missions cannot solve ‘wicked’ problems**

A common feature of many of the missions discussed in the volume is that they attempt in one way or another to solve ‘wicked’ problems, that is, problems that are complex, uncertain, and elusive, and span several policy areas (Nelson, 1977). This is not a coincidence but is in line with the kind of problems that many of today’s missions aim to solve. Several examples in our collection show that it is difficult, if not almost impossible, to ‘solve’ these complex problems in any meaningful and profound way through large politically initiated top-down projects. Good intentions and ample public funds are not enough.

Lucas and Boudreaux’s (2024) analysis of the US mission to eradicate homelessness is a good illustration of how difficult it is to tackle wicked problems. Despite good intentions, political consensus and a significant increase in resources based on what were considered to be evidence-based interventions, homelessness was hardly affected at all, and the goals set were

continually postponed and revised. Similarly, other social problems such as minority homeownership in the US (Henrekson et al., 2024b) or foreign aid (Waldron & Coyne, 2024) are complex and inherently difficult to solve.

Richard Nelson (2011), the doyen of evolutionary and innovation economics, argues that major societal challenges and many of today's serious problems cannot be efficiently addressed through missions because these challenges are different from the earlier missions – such as the Apollo and Manhattan programmes often referred to in the debate. Such projects were technically well-defined and delimited and could be decommissioned once the missions (in terms of technical solutions) were fulfilled. This conclusion is echoed by Nelson and two co-authors, who argue that missions are not the right approach to today's problems and challenges (Foray et al., 2012).

Mariana Mazzucato is probably the researcher and social commentator who has been most influential in highlighting missions as the answer to the greatest challenges of our time. Mazzucato (2021) uses Nelson's conclusion to argue that the wicked problems that characterise today's society require a *different* kind of mission that spans the entire economy and is more systemic than previous missions. It is no longer a question of solving a well-defined technical problem. Reforming and restructuring multiple, interdependent sectors and policies across society through centralised governance is a formidable challenge, and support for its success is almost non-existent.

## **2.2 | Politicians and government agencies are not exempt from self-interest**

The case histories of failed missions show that government actors are too often motivated by self-interest rather than the public good. In their contribution on homelessness, Lucas and Boudreaux (2024) show how many actors twist arguments and evidence to advocate a particular (political) solution that primarily benefits themselves.

In public choice theory, an important starting point is that, like consumers and entrepreneurs, political decision-makers and bureaucrats are driven by self-interest. Several contributions to the volume use this approach, notably Holcombe (2024) and Björnemalm et al. (2024). The latter show, for example, how authorities responsible for missions act in their self-interest and regularly describe their activities in an excessively positive way while ignoring less positive evaluations. Authorities also systematically rely on positive external evaluations where the evidence for the positive assessments is often weak (Collin et al., 2022).

Politicians can also benefit from large missions as they often result in positive publicity. President Nixon was able to benefit from the positive publicity generated when he launched his ‘War on Cancer’ in 1971. Five decades later, when Biden repeated President Nixon’s rhetoric and implemented his ‘Cancer Moonshot’, it appeared that the president was taking strong action against something that people fear.<sup>2</sup>

Mazzucato (2021, pp. 32 ff.) explicitly rejects public choice theory and argues that the self-interest claim lacks empirical support. While it is likely that both politicians and bureaucrats are not solely driven by self-interest, it would be naïve to assume that policymakers are completely free of it. Muldoon and Yonai (2023) argue that advocates of missions often assume that bureaucrats and civil servants are well-informed and selfless, while states and governments are similarly portrayed as thoughtful, basing their decisions only on relevant information without other (e.g. partisan) considerations. The contributions in the volume show in a number of ways that this is too naïve a view to adopt when analysing missions.

### **2.3 | Decision-makers lack information to design missions appropriately**

The case studies in the volume suggest that policymakers rarely have the information needed to design missions effectively and efficiently. For example, in the 1970s cancer research was still relatively undeveloped by today’s standards, making it virtually impossible to achieve the goals set by the mission (as pointed out by leading cancer researchers). Lucas and Boudreaux (2024) give another example where politicians continued to spend large sums on a mission related to homelessness that missed its targets early on. This underlines that many of the problems and difficulties associated with – ever so well-intentioned – missions are often discovered only after they have been attempted. Even people with a genuine desire to improve the world have limited knowledge and skills.

In line with this argument, Waldron and Coyne’s (2024) contribution is a good illustration of the knowledge problem associated with political governance and missions. Using Mazzucato’s principles as a frame of reference, the authors show how difficult it is to succeed in aid-related missions without sufficient information and feedback, which can easily lead to unintended consequences. In the worst-case scenario, missions can do more harm than good. André Alves’s (2024) study of the Brazilian government’s mission to create a thriving domestic shipbuilding industry provides another illustrative example of a failed mission where the politicians involved did not understand that the domestic industry lacked the necessary competencies and conditions to succeed.

The arguments are not really new. In 2011, reflecting on his 1977 book on missions, Nelson emphasised that a key argument of the book was still valid, namely that the lack of knowledge to make informed decisions “was not so much political as a consequence of the fact that, given existing knowledge, there were no clear paths to a solution” (Nelson, 2011 p. 685). The basic problem is simply that relevant knowledge is often lacking to enable the intended goal to be achieved through state-initiated missions.

#### **2.4 | Missions are subject to rent seeking and regulatory capture**

As already mentioned, many public actors, like private sector actors, are poorly informed and partly driven by self-interest. In addition, there may be interest groups that exert pressure on the political sector to gain (economic) advantages. Powerful and concentrated interest groups, such as large companies, trade unions and industry associations, can use their networks and financial resources to influence policy, often in areas where information is asymmetric, to the detriment of the political sector. These actors can then influence the design of regulations, remuneration systems and tax structures to their advantage. This aspect is further analysed by Holcombe (2024).

Many of the mission failures discussed in our book can be attributed to regulatory capture. Alves (2024) shows how attempts to revive Brazil’s shipbuilding industry were influenced by trade unions to provide extensive support to domestic suppliers that were not globally competitive. Waldron and Coyne (2024) argue that foreign aid politicised many receiving sectors in recipient countries, increasing the scope and scale of corruption and rent seeking.

Other examples include the influence of powerful interest groups on the government-backed US financial institutions Fannie Mae and Freddie Mac, which contributed significantly to the 2008–2009 US financial crisis. The same thing happened in Nixon’s War on Cancer. There, interest groups took over the agenda, diverting the focus towards patents and monopoly profits and away from prevention. Prevention would probably have led to a stronger emphasis on research into the carcinogenic effects of various substances on humans.<sup>3</sup>

The OECD (2021) uses the term ‘mission capture’ to highlight the risk of a mission being controlled by special interests. Since a mission should be developed by interacting and collaborating with established stakeholders, it is likely that they will have a very large influence on the process. Missions therefore tend to favour special interests rather than support new actors or institutional entrepreneurs (Bergkvist et al., 2022; Begemann & Klerkx, 2022). Bloom et al. (2019) also highlight this problem and argue that instead of focusing on the most socially

valuable missions, there is a tendency for politics to focus on missions where there is plenty of room for lobbying and client politics.

## **2.5 | Missions distort competition**

A starting point for missions is to emphasise the importance of cooperation, both between companies and between the public and private sectors. The state should actively point out “a direction that can foster and catalyze new collaborations across multiple sectors” (Mazzucato, 2021, p. 53).

Innovation is also in many respects the result of collective effort. This is easily recognised from an ecosystem perspective and the ‘collaborative innovation bloc’ (e.g. Elert & Henrekson, 2021), inspired by Schumpeter’s view (1989, p. 261)<sup>4</sup> that the entrepreneurial function is often performed by interaction and cooperation between many different actors.

There are also many historical examples of how pioneering innovations have been developed in close cooperation between different actors. Take, for example, Ericsson’s close collaboration with the Swedish telecommunications monopoly – the government agency Televerket – and the development of electronic exchanges and the first generations of mobile telephony in the 1970s and 1980s.<sup>5</sup> However, to assume that innovation is *only* about cooperation is going too far. The cooperation described above as crucial to the development of new technologies became a threat to free competition in the 1980s. The state monopoly now prevented innovative competitors from entering the market. In such an environment, missions can reduce competition and the innovative activities it is supposed to promote (Eriksson et al., 2019).

If we consider innovation and entrepreneurship in today’s developed market economies as both a competitive and a collaborative process, it becomes clear that missions can counteract competition and raise barriers to entry. For example, Yerger (2024a) discusses how cooperation between the public sector and incumbent firms can impede entry of other actors and lead to experts giving inadequate, poor or even erroneous advice (Koppl, 2018).

In many contexts, there may also be alternative ways to achieve a particular goal. For example, Swedish politicians could have tried to solve the Swedish housing shortage by removing the main cause – rent regulation – but instead opted for a centralised, large-scale effort that benefited publicly owned companies and private construction companies. Similar problems arise when it comes to reducing CO<sub>2</sub> emissions. Is nuclear, wind, solar or hydro the most efficient way forward? And what is the best balance between these options? Should the

state point out what it considers to be the best solution, or should we let the inherent selection, evaluation and experimentation of the market drive the process forward, even if it cannot point out in advance what the solution will be?

## **2.6 | Government support distorts incentives and creates moral hazard**

Once a decision has been taken to implement a particular mission, significant resources are made available to selected actors, in the form of preferential loans, R&D grants, various subsidies or protectionist measures. The availability of these resources influences the behaviour of actors. Many (large) companies may systematically take advantage of such government/policy allocations and become less cautious in their investment decisions – a scenario that can lead to increased moral hazard (moral hazard occurs when an actor has an incentive to increase its risk exposure because a large part of the cost of the risk is borne by someone else).

The actions of Fannie Mae and Freddie Mac during the US financial crisis are a clear example of the problem of moral hazard. While the institutions were guided by policy measures to increase lending to minority groups, they delivered profits to shareholders. They could meet these two objectives only by assuming ever greater risks, which eventually became so large that they threatened the stability of the entire financial system. With hindsight, it became clear that this was because too much of the risk was borne by taxpayers, which provided an incentive to guarantee loans to people who were not creditworthy.

The problems of distorted incentives are also illustrated in several other contributions to our collection. For example, Waldron and Coyne (2024) show how foreign aid programmes can distort incentives in ways that threaten the nation-building project that is the ultimate purpose of aid. The authors show how aid programmes can create destructive incentives. If firms can obtain large resources by lobbying for (more) foreign aid instead of focusing on producing and delivering valuable goods and services to voluntarily paying customers in a competitive market, firms may spend more and more time and effort on unproductive activities.

Under such circumstances, the probability increases that companies and organisations become “subsidy entrepreneurs” (Gustafsson et al., 2020), that is, actors who spend time and effort to benefit from politically decided grants and subsidies. Gustafsson et al. show that those who systematically apply for and receive subsidies from the state tend to have lower productivity. Companies that receive ‘free money’ for (technical) high-risk projects become immune to risk, which can ultimately result in significant losses for society.



Illustrative examples of unsuccessful technological initiatives due to distorted incentives, where the state believed it had the ability to get it right and tried to steer development in a certain direction, can be multiplied. In addition to the examples in the collection, one can, for example, highlight projects to produce ethanol from corn in the US and from cellulose in Sweden and biogas from tree residues (Sandström & Alm, 2022). Without large public subsidies, these investments would not have been made and the resources could have been used for other purposes.

## **2.7 | Opportunity costs are ignored**

The cases reviewed in the volume suggest that missions are typically conducted and evaluated with little consideration of opportunity cost. For example, Yerger (2024b) argues that the development of the GPS satellite navigation system cannot be evaluated without considering the opportunity cost, but central planners do not have the ability to assess these costs. Batbaatar et al.'s (2024) literature review shows that among the missions that researchers deemed successful (33 per cent of the cases studied), none reached this conclusion after looking at the actual costs or comparing them with alternative uses.

The Million Homes Program in Sweden is another example of this problem. The goal of building one million new homes in ten years was indeed achieved (total population at the time was a mere eight million). But the housing shortage remained a problem as a result of strict rent control and because many of the projects were implemented without sufficient consideration of the preferences of the residents. Nevertheless, a report published by Vinnova, the Swedish innovation agency, describes the Million Homes Program as “broadly successful” (Hill, 2022, p. 54), a conclusion shared by Mariana Mazzucato (Hill, 2022, p. 14). It is easier to come to this conclusion if the opportunity cost is ignored.

Kantor and Whalley's (2023) study of the US lunar landing project is one of the first studies of a mission to compare the effects of this initiative with alternative uses. They find that the positive effects of that project are no greater than what government investments of the same scale would have provided elsewhere. They thus call into question a central part of the anecdotal evidence regularly cited to justify missions. This is in line with Batbaatar et al.'s (2024) observations on the number of missions undertaken. They show that most missions or assessments of their impact do not consider the opportunity cost. Instead, an overly positive impression of the impact of missions is conveyed. This is no accident; ignoring costs and not paying attention to the resources used (and their alternative uses) seems to be a deliberate

approach. If missions are to be evaluated without reference to their costs, it is hardly surprising that many believe that missions are an efficient way of addressing important societal challenges.

### **3 | CONCLUDING REMARKS**

Based on the studies in our volume of theoretical and empirical contributions on mission-oriented innovation policy, we have extracted what we see as the seven most important lessons. In different ways, these lessons lead us to question how successful this strategy has been historically and the wisdom of continuing with this approach in the future.

The seven lessons highlight why missions rarely live up to expectations. Although our conclusions are primarily based on particular examples, we believe that the conclusions have a high degree of general validity.

However, simply criticising the ideas of others is only a first step. To substantially impact debate and policymaking, we need to suggest alternative solutions and approaches. This is done in the final third of the volume.

It would require too much space to describe these contributions in detail here. However, the alternatives all start from the fact that today's complex market economy is based on a decentralised process that allows, and provides room for, experimentation, evaluation, and selection – an evolutionary trial-and-error process in which firms and individuals spontaneously interact from the bottom up and test the economic viability of different solutions. A problem with this approach is that it leaves no room for grand visions of definitive solutions to the most pressing challenges of our time. A necessary condition for a far-reaching proposal to become practical policy is that it captures the attention of the media and voters. To overcome this obstacle to the option we advocate requires astute political entrepreneurship.

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## ENDNOTES

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<sup>1</sup> Many of the problems discussed are not only related to missions but can also arise from state intervention in general.

<sup>2</sup> By exploiting the population's general tendency towards loss aversion, and strongly emphasising a potentially very alarming or system-critical development if no political action is taken, politicians can create what Schnellenbach (2024, pp. 68–9) calls a "loss frame". This makes the public more willing to accept large political projects. By exploiting this type of population bias, the stated goals of the missions become more normatively appealing. The need to assess the efficiency and (opportunity) costs of the proposed measures can thus be downplayed. According to Schnellenbach, this method of argumentation has been used to implement many missions such as DARPA and the original Apollo programme.

<sup>3</sup> See Muldoon & Yonai (2023) for further examples of missions giving rise to rent seeking.

<sup>4</sup> Many important contributions in the innovation and entrepreneurship literature also explicitly or implicitly emphasise this idea. See for example McCloskey and Klamer (1995), Garud and Karnøe (2003), and Sarasvathy (2008).

<sup>5</sup> The cooperation between Ericsson and Televerket is not in itself an example of a successful mission-driven cooperation but shows how cooperation in technology development between a competent procuring agency and private actors could lead to progress (the same can be said of the interaction between the defence industry and defence agencies). It is far more difficult to direct product development and production by means of a comprehensive mission in markets consisting of a variety of more anonymous customers and actors.