

Innovations, and development, need bureaucracy^a

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Abstract

Based on our recent book, *How to make an entrepreneurial state: Why innovation needs bureaucracy*, we explain in this policy brief how government's successful support of innovations is not based on a single best-practice type of bureaucracy, but on achieving a synergistic dynamic between different types of organizations. We propose the concept of "agile stability," which is the symbiosis between the agility and dynamism provided by charismatic networks and the long-term focus, predictability and stability provided by expert organizations. We discuss the role of "bureaucracy hackers" and "mission mystique" as key components of innovation bureaucracies and explain how these components allow innovation bureaucracies to cope with the risks and uncertainties associated with innovation and potentially lead to dynamic changes in innovation processes, not least in the context of the developing world.

How would a world without quantum mechanics look? There would be no computers, no iPads, no mobile phones and certainly no satellites. Most 20th- and 21st-century electronics and all of the content that runs on them, from space communication to *Elden Ring*, would not exist. The birth and development of quantum mechanics demanded scientists, entrepreneurs and innovators, but also called for bureaucrats and bureaucracies. Behind the development of quantum mechanics was a complex bureaucratic web of public and private capacities and capabilities, able to envision, plan, iterate and deliver.

Innovation bureaucracy

Society owes much of what came to be known as quantum mechanics to a rather obscure public organization, the Physikalisch-Technische Reichsanstalt (PTR), established in 1887 in a small German town of 30,000 people. The main

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purpose of the PTR – to develop physical standards and measurement instruments – does not sound wildly exciting or innovative for today’s readers. However, the PTR played an important role not only in the pioneering work of Max Planck and others in quantum physics, but also as a crucial cog in the rise of German industrial leadership, particularly for the electrical industry, and helped to create technologies and global players that still exist today, such as Siemens and AEG.

It took more than 15 years of discussions to establish the PTR, but its success was phenomenal. By the early 1900s, the organization was the global leader in its fields and had helped win two Nobel prizes (Wilhelm Wien in 1911 and Max Planck in 1918). The PTR was one of the key drivers in shifting global technology and innovation leadership from the UK to Germany.

In our book, *[How to make an entrepreneurial state](#)*, we argue that the establishment of the PTR – who was involved, how and why; its initial resources and its organizational evolution – offers an almost ideal-typical example of how (successful) innovations build on bureaucracies and how such bureaucracies are established and evolve. The PTR was established on land donated by Werner Siemens, one of the leading industrialists of the time. Moreover, Siemens heavily lobbied for the PTR with the German government, covered the initial construction costs and recruited its first leader in Hermann Helmholtz, an outstanding German scientist and science organizer. Based on his experience as an industrialist, Siemens also gave PTR its organizational design – namely, the departmental division and hierarchy of authority and control – and guidelines on how to develop it. His idea was to find a charismatic leader for the new organization who would build a “scientific bureaucracy” – a blueprint of how to move from the agile and startup phase of the organization to a more stable delivery-focused one.

In our book, we make the case for why and how innovations rely on bureaucracy. We tell the story of innovation bureaucracies: public sector organizations tasked with creating, funding, regulating and procuring innovations. While it sounds like an oxymoron, “innovation bureaucracy” is real and powerful.

From agility to stability, and back

The role played by Siemens and others like him is that of a charismatic “[bureaucracy hacker](#)”: somebody, normally an outsider, who is highly skilled at navigating an existing bureaucracy and political networks, with enough clout to push forward changes, who can open doors for new ideas and new ways of working. “[Hacking](#),” solving problems and building ad hoc collaborations and teams are all very much a part of innovation bureaucracy dynamics, providing the agility to adapt to a changing environment or to drive needed changes in public organizations.

Bureaucracy hackers, who become the charismatic center points of specific change movements, are extremely adept at creating “[mission mystique](#),” a term coined by Charles Goodsell in 2010. Mission mystique is essentially a bespoke belief system, unique to a specific organization. Creating and sustaining mission mystique is a key component of innovation bureaucracy. It allows innovation bureaucracies to cope with the risks and uncertainties associated with innovation (failing in the public sector is always tough and draws a lot of criticism) and lead dynamic changes in innovation processes.

Simply put, we argue that successful support for innovation by the government rests not on a single best-practice type of bureaucracy, but on a dance between different types of organizations: new, agile innovation bureaucracy organizations are established to deal with emerging technological or socio-economic challenges, and over time these organizations, or rather the tasks they fulfil, are “socialized” or institutionalized into existing public sector practices.

Perhaps surprisingly, this dynamic was well described and indeed predicted by none other than Max Weber, one of the foremost social scientists of the last but one turn of the century. Often a strawman for bureaucratic, legalistic and rigid organizations, Weber described a variety of ways in which authority is generated and exercised, and he explained how one type of authority (charismatic) becomes another type (bureaucratic), only to be challenged again by the initial type (charismatic).

In our book, we argue that these Weberian notions reveal themselves in the context of innovation bureaucracies through two ideal-typical categories of organization – *charismatic networks* and *expert organizations* – and that their evolution is often characterized by an oscillation between the two extremes within the same organization or by the emergence of new ones. As we show, charismatic networks provide agility and dynamism for innovation bureaucracies to identify new directions and ways of working, while expert organizations enable long-term focus, predictability and stability to deliver needed policies and results. Both are key to the success of capitalist systems. Indeed, we propose to call this symbiosis *agile stability*. It is this contradictory, counterintuitive combination that fosters the success of [the entrepreneurial state](#).

Lessons for today, and for development

What can we learn from the history and theory of innovation bureaucracies for addressing today's challenges? A recent lesson from [COVID-19 response is that some of the most innovative policies emerged in the developing world](#). For a long time, the development consensus was that economies need strong autonomous central development agencies to spur innovation and growth. Yet, as we argue in the book and as evidenced by COVID-19 response, effective bureaucracy requires multiple different kinds of organizations to successfully deliver good services. Out of the ashes, or embers, of the COVID-19 pandemic, wars, cost-of-living crises, and climate catastrophe, the idea of 21st-century innovation bureaucracies is emerging. Such organizations seek to combine a focus on long-term capacity building (e.g., in the form of building a professional workforce or functioning public digital infrastructure) and on [dynamic capabilities](#) for actively responding to and steering contextual events (e.g., developing capabilities for agile public procurement or user-focused analytical tools to analyze the use of public services). These organizations aim to be both dynamic and resilient by design. Thus, we can justifiably call these *neo-Weberian agencies*.

Let us briefly examine two examples, Vinnova in Sweden and Government Digital Service in the UK. The Swedish innovation agency Vinnova has attempted to adapt its way of working over the last few years by, among other changes, establishing a new position: strategic design director. This change is an attempt to leverage new

capabilities nested in human-centric design. As a result, Vinnova's work is being reframed, from focusing primarily on technological issues to tackling socio-economic challenges and transforming related socio-technical systems. This shift has meant considerably enlarging the circle of key stakeholders and altering the way of working at Vinnova. For instance, one of the missions of the agency is rethinking food systems to provide healthy, sustainable food in Swedish schools. To deliver on this mission, Vinnova is working with the entire food delivery value chain, from producers to users (children and parents), to spur innovations (via funding), create markets and transform existing systems – from energy production and transportation to waste management. In other words, Vinnova is seeking to combine a relatively long-term view of investing in new technologies with short-term changes in day-to-day food habits. We argue that Vinnova is attempting to develop capacities and capabilities for agile stability. While Vinnova is only at the beginning of its transformation, its blueprint is being increasingly copied by Nordic and other countries.

The UK's Government Digital Service (GDS), created in 2011, has emerged as a global gold standard in public sector digital agencies and is, in our view, another fascinating example of a neo-Weberian agency and of agile stability in action. GDS radically transformed the government's digital transformation mindset ("strategy is delivery") and digital procurement through establishing spending controls on procurement contracts and creating a new digital marketplace for bids. These changes have enabled thousands of small- and medium-sized enterprises to bid and win public tenders and disrupt existing oligopolistic markets, thereby creating new, more open, IT markets around government digital transformation. At the same time, GDS also radically changed the government's digital presence through the creation of a unified gov.uk website, which altered the entire user experience of the UK government. The new website is informed by user research and design practices to make information and services readily available and digitally usable. In its initial years, GDS offered a vision and practice of a highly dynamic and agile government agency. Many of the people hired by GDS outside of the civil service did not come from the private sector, but from the BBC and other similar public and third-sector organizations. The value system underlying GDS was therefore inspired as much by post-war British modernism, with its focus on public space, as by the open web movement and positive notions of hacking.

In the last few years, however, GDS has become the standard-bearer for the digital and design profession within the UK government. Hackers and doers have become the new mandarins, or perhaps the mandarins have co-opted key capabilities brought in by GDS. The initial dynamic capabilities of GDS around user-centered design have become increasingly part of the routine skills many departments and agencies source in house, rather than relying on a central agency.

The United Nations Development Programme's [strategic innovation unit](#) is bringing similar ideas into practice in development. This unit supports analytical diversity, citizen-focused engagement and the integration of agile capacities into development policies, but also promotes a radically contextual approach that looks at the specific conditions of innovation at least as much as at its general principles. There is a tendency in innovation policy, and beyond, to equate good institutional features, often called “best”, with those of the most successful global-Western practices. However, this association is neither true (some of the best innovation bureaucracies today by our standards are East Asian, for instance), nor are any of these features necessarily the best, depending on unique contexts of legitimacy and performance. In addition, shifts both in what success means – no longer growth for growth's sake – and in growing awareness of the potentially exploitative and unjust consequences of a standardized innovation model must give pause and prompt further research and thinking. Nevertheless, once the decision for moving on, and up, with the innovation dynamic in a specific time and place is made, the general principle of agile stability as a condition necessary for success seems to hold.

Altogether, these examples indicate that it is [no longer sufficient](#) to face technological challenges by creating agile organizations to replace existing bureaucracies, nor is it a viable option to retain existing bureaucracies for routine, equitable deployment without a new emphasis on risk-taking and contemporary and future competences. We need both the new and the old, and we need both at the same time – increasingly within the confines of the same organization. Developing an innovation bureaucracy demands high-level judgement power, resolve, tenacity and funding; if this sounds difficult and expensive, the alternative is failing to meet the challenges of our times.



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