A Hybrid-Method Scenario Approach for Resilience

Crafting future scenarios is rarely a textbook exercise; the complexity of the real world demands paragmatic blends of methods.

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101094455.

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As foresight professionals we often encounter futures issues for organisations and governments that can benefit from being explored using scenarios. There are many types of scenarios and many approaches to building them. So, like a carpenter, the foresighter will need to choose his or her tools with care. The experienced foresighter knows that building effective scenarios is rarely a textbook exercise, and that real-world complexity often demands a pragmatic approach.

This article draws on insights from the FutuResilience project, an EU Horizon Europe initiative using foresight to strengthen societal resilience. One of the project's cases focused on the challenges facing the Bulgarian healthcare system. Bulgaria is among the many countries across the world that are experiencing a long-term trend of rising health care costs as a share of GDP. This trend will weigh heavily on government finances and is unsustainable in the long term.

As part of the FutuResilience project, the Copenhagen Institute for Futures Studies (CIFS) investigated how Bulgaria, and the health care system in particular, can increase its resilience in face of this looming crisis. This article provides an overview of this process, which involved developing a multi-method scenario approach, drawing inspiration from Jim Dator's Four Generic Futures framework and blending it with Herman Kahn's variations scenarios. The method was designed specifically to support policy recommendations for resilient healthcare systems.

The Bulgarian healthcare system as the case

European healthcare systems, including Bulgaria's, face compounding challenges that threaten their long-term sustainability and social impact. Rising costs, growing burdens of non-communicable diseases (NCDs), and workforce shortages are converging with rapid demographic aging, placing significant strain on healthcare infrastructure and budgets. Thus, the rising share of healthcare expenditure in GDP is a growing concern for many economies. If this trend continues, healthcare will consume an ever-larger portion of national income, crowding out other critical public investments like education and infrastructure, and potentially jeopardising the European green transition.

In Bulgaria, these issues are especially pronounced. As one of the EU countries with the highest rate of preventable mortality, largely due to cardiovascular disease, cancer, and diabetes, the nation faces a pressing need to reimagine its healthcare system and delivery model. A core issue in Bulgaria's healthcare system is underfunding, which leads to resource shortages, disparities in service quality and high out-of-pocket expenses for the individual, meaning that patients bear a larger share of the total healthcare cost themselves. Bulgaria has one of the highest out-of-pocket healthcare expenditures in the EU, more than double the EU average.

Introducing Dator's Four Alternative Futures

In the late 1970s, Jim Dator of the University of Hawaii at Manoa introduced a model of change in social systems called The Four Generic Futures, which examines four distinct archetypes of alternative futures.

The method is regarded as a foundational model in futures studies. It categorises possible futures into four broad archetypes. These archetypes were, according to Dator himself, derived through a systematic analysis of "images of the future" found in media, academic essays, literature, science fiction, as well as corporate and public long-range planning documents. By identifying and comparing these recurring archetype narratives, the Four Generic Futures model enables a structured discussion of alternative futures and helps uncover the cultural and institutional biases embedded in our expectations of change. To a certain extent, you could say they aren't scenarios at all, but narrative templates that reveal how people tend to organise expectations about the future into preconfigured mental boxes. Unlike strategic explorative scenarios, which emphasise plausibility, internal consistency, and analytical objectivity, the Four Generic Futures are deliberately shaped by cultural and institutional biases.

The Four Generic Futures are outlined as follows:

- **Continued Growth/Continuation:** A representation of a future in which current trends and 'business as usual' dynamics continue largely unchanged. This is often the default assumption in mainstream policy and planning.

- **Crisis:** A representation of a future where the emergence of crisis causes the decline or degradation of a current system (society, economy, or environment).

- **Discipline/Constraint:** A representation of a future shaped by societal constraints, often with a focus on controlled and managed change as our societal behaviour adapts to a more sustainable state.

- **Transformation:** A representation of a future where transformational factors change the game, driving a radical shift in how society is organised. This is typically triggered by technological breakthroughs, paradigm shifts, or major social innovations.

Dator's framework is effective for surfacing underlying assumptions, structuring conversations about change signals, and exploring biases and preferred futures. However, its strength lies primarily in its diagnostic and descriptive capacity. While it provides a structured way to imagine alternative trajectories, it does not directly support policy design or testing to determine which actions or policies would be most effective across those imagined futures. For this reason, we chose to develop this hybrid approach, which takes its departure in Dator's Futures, but reorients it from being descriptive archetypes to being used prescriptively to test policies.

A hybrid approach for resilience

Starting from Dator's framework, we worked with three of his four archetypal futures that are particularly relevant to the challenges facing Bulgaria – but not all of which are equally feasible or plausible.

Continued Growth/Continuation: This scenario arises from the expectation that the continued expansion of the healthcare system is possible. Yet in Bulgaria's case, fiscal limitations present a major barrier. With a continued expansion comes rising costs that are unsustainable for government budgets in the long run, effectively creating a crisis that could prove disastrous if expectations are not tempered. In essence, the Continuation scenario and the Crisis scenario, detailed below, are two sides of the same coin.

Crisis: The Crisis scenario is founded in an array of disadvantageous developments facing Bulgaria in the decades to come. By 2040, more than 30% of Bulgarian citizens will be over the age of 65. Combined with persistent financial constraints, critical workforce shortages, and fragmented digital infrastructure, these challenges threaten the long-term sustainability and equity of healthcare provision. Bulgaria's rising health expenditure will place a heavy burden on government budgets. The Government must either raise taxes or increase borrowing, reduce spending on healthcare or cut public spending in other essential areas such as social services, defence, or education. Reducing spending on healthcare is critical, but if it is not done through efficiency gains it will only lead to the hollowing out of the quality of the healthcare system and create greater polarisation as more affluent individuals move towards private healthcare services. This is the peril facing the Bulgarian healthcare system. Our Crisis scenario is an adjusted version of Dator's Collapse/Decline archetype, which is more severe and potentially disastrous in its outcome.

Transformation: In our multi-method model, transformation is the resilient scenario that can be created once the inherent bias and obsolete assumptions underlying the Continuation scenario are recognised and the risk of a Crisis scenario is acknowledged. Together, these two scenarios provide the background for achieving reperception – a shift in perspective – and for cultivating the willingness to explore transformation.

In Dator's original model, each of the archetypes are conceptually independent, and none are assumed to lead to or emerge from the others. However, in this pragmatic adaptation, the Transformation scenario is treated differently – not as a passive archetypal view of the future, but as a preferred scenario to be consciously pursued.

The potential for transformation in relation to resilience, in this case, emerges from the acknowledgment of the risk of a Crisis scenario. Working with Bulgarian national stakeholders, it became clear that the scenario pathways are shaped by three key uncertainties that are especially influential for the healthcare system's future trajectory:

- The role of the private sector
- The societal impact of climate and sustainability challenges
- The uptake of automation and AI

Each of these uncertainties were expected to influence a crisis in Bulgaria's healthcare system in different ways. Treated as distinct lenses, they were used to examine three variations of the Crisis scenario and to explore potential entry points for constructing a resilient transformation pathway, grounded in the specific dynamics of each uncertainty.

This essentially leaves us with four versions of the Crisis scenario – a core crisis scenario and three variations of this through the lenses of the identified three key uncertainties:

- **Same old, same old** (core Crisis scenario): General acceptance of the status quo, with skepticism towards rapid changes or reforms. Prevailing distrust in the political system, contributing to a passive approach to healthcare improvements. If business as usual continues, a collapse of the healthcare system will happen.

- **Variation #1** (Private Sector Dominance): Growing acceptance of private sector solutions. Access to high-quality care depends significantly on personal financial means.

- **Variation #2** (Climate-Centric Governance): Public sentiment shifts from skepticism towards healthcare reform to a deep concern over the escalating impact of climate change. The healthcare system's ability to adapt is severely tested.

- **Variation #3** (AI-Driven Healthcare): AI is having a significant uptake in society bringing with it both opportunities and threats.

At this point in the process, we have moved away from Dator's original archetype scenarios and work only with the four remaining scenarios – the core Crisis archetype and the three variations of this.

Based on these four scenarios, stakeholders were asked to identify policies that would help create a more resilient healthcare system. These were then tested against the four scenarios in a windtunneling exercise, with the purpose of identifying policies that would work across the different futures. The windtunneling exercise is a method used to test strategies, policies, or decisions against multiple future scenarios. It helps assess how well these choices perform under different possible futures, revealing strengths, weaknesses, and areas needing adaptation. This work provides the basis for planning for the future and the initial steps in a roadmap and from this the Transformation scenario can be written.

Advantages of the hybrid approach

This multi-method approach has several advantages:

First and foremost, instead of trying to fit the world to the method, adjusting and adapting methods like done here rather fits the method to the problem for better solutions generation. The benefit of this approach is that it shifts from a descriptive and diagnostic approach, referring to archetypical pictures of the future, to being more prescriptive and actionable.

More concretely, it provides a means to move from conversation about beliefs to test policy against scenarios and provide robust policy advice. Yet, it still maintains the benefit of Dator's approach, as a discussion tool that, especially in the beginning of a process, can have high value when engaging with diverse stakeholders. Importantly, the reconfiguration in the process from archetypes to actionable scenarios maintains a unified framework while moving people from personal beliefs to actionable futures.

This hybrid scenario method has been used by CIFS in a resilience context, where it is particularly useful because of the crisis focus. But it could also be applied in business contexts to explore major societal shifts or disruptive changes. ■