# Online foresight platforms: Evidence for their impact on scenario planning & strategic foresight

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### A R T I C L E   I N F O

### A B S T R A C T

Developments in social media, Web 2.0 and crowdsourcing have enabled new forms of methodological innovation in both the social and natural sciences. To date, relatively little attention has been given to how these approaches impact scenario planning and strategic foresight, especially in public projects designed to engage multiple stakeholders. This article explores the role that online approaches may play in qualitative scenario planning, using data from five empirical case studies. Two categories of measures were used to compare results between cases; participation characteristics, such as the number and type of participants involved, and interaction characteristics, such as the number of variables and opinions incorporated, the mechanisms of analysis, etc. The systems studied were found to have substantial impact on the early stages of the scenario process, in particular: increased participation in terms of both amount and diversity, increased volume and speed of data collected and analyzed, increased transparency around driver selection and analysis, and decreased overall cost of project administration. These results are discussed in the context of emerging issues and opportunities for scenario planning, particularly for public scenario projects, and how such tools and platforms might change scenario practice over time.

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## 1. Introduction: the rise of the Social Web as an engine for methodological innovation

Developments in social media, Web 2.0 and crowdsourcing (here-in described as "large-scale collective intelligence systems") have enabled new forms of methodological innovation in both the social and natural science. Examples such as "FoldIt", the protein folding game, or the DARPA red balloon challenge, illustrate how large numbers of diverse participants can tackle complex problems in a coherent fashion. To date, most scenario planning methods rely on a handful of expert interviews and a small number of in person workshops to produce results. Web-based participatory systems, by contrast, offer the possibility of engaging hundreds, thousands, or even more stakeholders, interest groups and geographies. What impact might this have on scenario planning practice and method?

O'Rielly [1] defines Web 2.0 as a way of "harnessing collective intelligence" by providing "architectures of participation" that embrace experimental "perpetual beta" applications in a way that provides for easy experimentation and collaboration between diverse communities. Anderson [2] later expanded upon definition, adding that Web 2.0 approaches must include:

- Individual production of user-generated content, including amateur contributions
- "Folksonomic" tagging, i.e., user-signification of data, shared with a community [3]
- Data aggregation and social filtering
- Participation and openness in terms of data, API's and intellectual property

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Cast in this light, Web 2.0 approaches allow skilled experts to create easily accessible frameworks for collaboration, which the general public can then populate with their own content and analysis. This approach is typified by services such as Facebook and user-generated "mash-ups", which combine data from different sources to provide unique services of interest to specific communities.

Within the Web 2.0 umbrella, a range of different approaches have emerged which may have more utility for academics and practitioners. These include crowdsourcing, social computing, human computation and collective intelligence. Crowdsourcing is often defined as a subset of activities and systems within the broader ecosystem of Web 2.0 services. Jeff Howe, the originator of the term crowdsourcing, is explicit about his definition. Howe [4] writes,

Crowdsourcing is the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call…The crucial prerequisite is the use of the open call format and the large network of potential laborers. (Howe, 2006)

This definition emphasizes the distribution of discrete elements of labor to a large group of people outside a traditional organization (thus the etymological connection to the phrase, "outsourcing"). Services such as Innocentive, which help organizations post challenges and rewards those who offer promising solutions, or Amazon Mechanical Turk, which breaks complex tasks into discrete steps for distribution and completion by a crowd, are examples of such an outsourcing approach. Wikipedia is another popular example, where distributed contributors add, edit and debate content to create an emergent product.

Web-based approaches are often praised for their ability to accomplish things which face-to-face groups cannot. In the context of public policy and participatory governance, for example, Brabham [5] suggests that enhanced, "speed, reach, asynchrony, anonymity, interactivity and the ability to carry every other form of mediated content" enables planners to engage people in ways never before possible. Schenk and Guittard [6] add that such approaches have the potential to produce better analytical outcomes, as well, leveraging positive network externalities, enhancing participation and creating greater stakeholder buy-in.

### 1.1. Applications to Scenario Planning and Public Policy

Relatively little scholarly work has been devoted to exploring how these systems might impact the scenario planning process, either positively or negatively. This is complicated by a lack of empirical evidence for evaluating the impact of scenario planning itself.

Historically, scenario planning developed as a facilitated process for overcoming individual and group decision making biases in the face of long term uncertainty [7–9]. It has since evolved into a range of diverse approaches for helping managers and policy-makers understand change in their respective fields [9–11]. Unlike forecasting or quantitative trend analysis, which attempt to reduce uncertainty and project estimates of future outcomes, scenario planning attempts to uncover and exploit

uncertainties within the strategic environment as a tool for learning and awareness-building. Its goal is to expand the range of parameters taken into account, thereby helping participants better understand their assumptions about the future and test these against a range of possible outcomes.

Despite widespread application of qualitative scenario techniques, there is a growing body of methodological criticism about how it is most often practiced [12]. Leaving aside the cultural and social critiques of how the process is often used (such as the extensive work of Slaughter [13,14] or Inayatullah [15,16]), there are at least three methodological limitations which warrant consideration.

First, the process is labor-intensive, involving significant investment in background interviews, data collection, face-to-face discussion, and group workshops. This creates a limit on the number of people who can participate in, and benefit from the process. Next, it commonly involves a predominance of senior decision-makers and subject matter experts, many of whom exhibit conscious or unconscious biases towards vested interests or the status quo. By reducing the range of sources considered and relying upon the input of established figures and subject experts, important perspectives and information sources can be excluded [17]. Finally, scenario planning is highly dependent upon the skill and experience of the workshop facilitators and scenario writers. Different futures consultants working with the same group may produce very different outcomes, a fact which makes the process highly idiosyncratic [18,19].

The combination of participation limits, participant bias, facilitator bias, and author subjectivity can cause important viewpoints to be missed, important data or trends to be ignored, or unpopular and unpleasant futures to be dropped. More importantly, the very nature of a workshop-based process may limit the scalability of such an approach as an economical, robust and large-scale tool for increasing strategic flexibility and stakeholder involvement. This is particularly important in public scenario projects, such as those run by governments, foundations or other multi-stakeholder organizations, where socialization to the issues and buy-in is often an essential aspect of the project design. Finally, the focus on small-group, business-environment decision-making suggests that elements of the process may need to be adapted for public policy settings, in which more participants need to be involved, the goals of the exercise are often contested and the outcomes must communicate to a wide variety of interests and values.

These challenges are compound by the relative lack of formal evaluation studies on the effects and outcomes of scenario planning. Some of the better recent research in this area has been conducted by Ringland [20], Bezold [21] and Burt [22], as well as the ongoing work of Chermack and colleagues in developing preliminary survey instruments for the perceived impact of scenario projects on participant's "mental models" [23–25].

If policy makers and scenario practitioners are to take the claims of digital participation more seriously, it is necessary to create more robust evidence for the value and impact of digital tools in scenario creation and, ultimately, better decision-making. This paper makes a small step towards that larger goal by asking what impact web-based approaches have on:

• The number and type of participants involved in the scenario planning process