



ELSEVIER

Contents lists available at ScienceDirect

Technological Forecasting & Social Change

journal homepage: www.elsevier.com/locate/techfore

Thinking together about the future when you are not together: The effectiveness of using developed scenarios among geographically distributed groups

Aiwen Hew^a, Robert K. Perrons^{a,b,*}, Simon Washington^c, Lionel Page^a, Zudou Zheng^c

^a Queensland University of Technology, GPO Box 2434, Brisbane, QLD 4001, Australia

^b Centre for Strategy and Performance, University of Cambridge, United Kingdom

^c School of Civil Engineering, University of Queensland, Brisbane, QLD 4072, Australia

ARTICLE INFO

Keywords:

Scenarios
Online
Digital
Survey
Asia-Pacific
Transportation

ABSTRACT

Scenarios have been effectively used over the years to trigger and accelerate learning, to stretch the mental models of managers, and as a tool for helping executives to develop strategies in the face of uncertainty. However, the scenario literature frequently assumes a high degree of continuity between the scenario-building process and the use of the resulting scenarios in strategy development, and that the participants throughout these processes will be in the same geographic location. As part of a research project exploring the future of transportation in the Asia-Pacific region, we examine the use of previously developed scenarios by transport experts to re-imagine the future of transportation in the region. Our approach involved delivering scenarios online to enable the participation of various stakeholders in the region who were geographically dispersed. The results show that the developed scenarios contributed to individual learning that, in turn, led to a change in mental models. The results also demonstrate that scenario-related processes can be conducted online to be more cost-effective, flexible, and less constrained by geographic barriers. In doing so, this paper usefully extends both the theoretical and practical dimensions of this topic by exploring an alternative approach for large participation in scenario-related processes in the public domain.

1. Introduction

Scenarios have been used effectively over the years as a “cognitive device” to trigger and accelerate learning, to stretch the mental models of managers (Bood and Postma, 1997; Cairns et al., 2016; Chermack and Swanson, 2008; Schoemaker, 1995; Schwartz, 1991; Van der Heijden, 2005), and as a tool for helping executives to develop strategies in the face of uncertainty (Camillus, 2008; Dye et al., 2009; Hartford, 2016; Leberecht, 2016). A broad range of organisations have used scenarios to these ends within a diverse spectrum of industries and topics, including climate, energy, and transportation (McDowall and Eames, 2006; Resch et al., 2008; Yuan et al., 2014). At Royal Dutch Shell, scenarios were presented to people in different departments throughout the company, including the chemicals, refining, marketing, exploration, and production divisions (Schwartz, 1991). But prior applications of scenarios and investigations looking at the relative effectiveness of different approaches to scenarios typically assume that their development and use as comprehensive strategic planning tools should be conducted as more or less connected activities, and that participants

who are involved in the development of scenarios also go on to become their users (Bowman et al., 2013; O'Brien and Meadows, 2013; Tapinos, 2012; Wright et al., 2013).

What is more, the existing body of literature and “how to” guides for applying scenarios are frequently underpinned by an expectation that the participants will be working collaboratively in the same geographic location (e.g., Schwartz, 1996; Van der Heijden, 2005). Since the idea of scenarios was first popularised, however, significant progress has been made in digital technologies—specifically, those associated with interpersonal communication (Kim and Chilamkurti, 2017) and delivering educational resources to people across significant geographical distances (Peters, 2003). It therefore follows that the increasing sophistication and ubiquity of these technologies may materially impact the scenarios domain. Different scenario methods have been explored in the literature in an effort to improve stakeholder participation (Bowman et al., 2013; McWhorter and Lynham, 2014; Wright et al., 2013) among participants who are time-poor, and who are senior decision makers within their organisation (O'Brien, 2004; Pincombe et al., 2013). Within the scenario development process, Raford (2015) found

* Corresponding author at: Queensland University of Technology, GPO Box 2434, Brisbane, QLD 4001, Australia.
E-mail address: perrons@alum.mit.edu (R.K. Perrons).

<https://doi.org/10.1016/j.techfore.2018.04.005>

Received 1 September 2017; Received in revised form 15 March 2018; Accepted 4 April 2018
0040-1625/ © 2018 Elsevier Inc. All rights reserved.

that online approaches using social media, “web 2.0,” and crowd sourcing have the potential to increase the amount and diversity of participation and the volume and speed of data collected and analysed. O'Brien et al. (2017) suggest that Twitter can support wider participation and engagement in activities associated with running a scenario project.

In an international research project investigating transport experts' opinions about transportation options and mobility-related commodity prices in 2030, we investigated the use of scenarios as a strategic tool with the aim of shifting the mindsets of the various stakeholders who could contribute to an overarching vision of how transportation in the region could change. To assist respondents in anticipating changes, and to consider the deeper underlying trends in 2030, the project adopted pre-constructed scenarios that are widely available and frequently used for similar kinds of energy and transport-related research (e.g., McDowall and Eames, 2006; Resch et al., 2008; Yuan et al., 2014). These scenarios were essentially used as prompts to engage the various stakeholders in exploring and making sense of the region's future (O'Brien and Meadows, 2013; Wright et al., 2013) with regards to the future of transportation en route to shedding light on emerging transportation trends within this region and, onward from that, to inform policymakers, government leaders, organisations, and people connected to the transport industry. Moreover, the scenarios were delivered online to enable collaborative yet asynchronous engagement while valuing the limited time availability of the participants (Cairns et al., 2016; Raford, 2015).

While the use of scenarios has been increasingly accepted among practitioners and academics as a strategic thinking tool to accelerate learning and stretch mental models of time-poor individuals (e.g., Bood and Postma, 1997; Cairns et al., 2016; Chermack and Swanson, 2008; Schoemaker, 1995; Schwartz, 1991; Van der Heijden, 2005), we also acknowledge the critique on using existing narratives of the future in exploring complex and ambiguous issues (Bowman et al., 2013; Tapinos, 2012; Van Vliet et al., 2010). The decision to apply pre-existing scenarios was due to the time constraint of the project and the cost of bringing together multiple stakeholders across several countries who are time-poor for a scenario exercise. Here, we present and analyse empirical evidence that captures the outcomes of using developed scenarios by transport experts and discuss the online scenario intervention process by large number of participants. The findings in this research project are an effort to provide a small but valuable contribution to building an understanding of the role scenarios may play in future planning in the public domain.

In the next section, we will discuss in detail the background of the research project, its overarching aims, and the process by which the scenarios were delivered online. We will then put forward hypotheses derived from past research, and explain the variables that we have used to test the hypotheses.

2. Contextual background of the research project and its aims

For many years, the Australian automotive industry has been contending with a changing and dynamic business environment (Brice, 2013; Dowling and Wills, 2013). By the end of 2017, all remaining Australia-based automotive manufacturers—including Ford, Toyota, and Holden (General Motors' local brand)—will close their operations after almost 100 years of production while retaining design studios as well as engineering facilities in the country (Holden Australia, 2013; Kitney and Hepworth, 2015; Toyota Australia, 2014; Wallace and Ferguson, 2014). The Australian Automotive Manufacturing Industry Inquiry Report points to highly competitive global and domestic automotive markets as a reason for these closures (Productivity Commission, 2014). These changing market conditions, along with rapid advances in technology and increasingly stringent environmental regulations, have contributed to the demise of these manufacturers (Dowling and Wills, 2013; Pollak, 2014).

With the closure of all Australian-based automotive manufacturers, the industry needs to innovate to seek new opportunities and outmanoeuvre an increasingly competitive field. Also, growing pressure to overhaul the world's energy mix and the push for cleaner emission requirements in road transport carry with them a clear opportunity for green and fuel-efficient vehicle technologies and infrastructure to secure larger market shares than they currently have. Through the development of new market niches and novel innovations (Buciuni et al., 2013), the Australian car industry can potentially broaden its scope and reinvent itself to become a significant player in innovative technologies and infrastructures in the international arena (Climate Change Authority, 2014). The scope of the research project was accordingly expanded to include some of Australia's largest trading partners in the Asia-Pacific region (Grimson, 2014), where energy efficiency policies have shown signs of improvement (Copenhagen Centre on Energy Efficiency, 2015).

The overarching goal of this project was to gain an understanding of the current transport and mobility marketplaces in these countries, as well as forecast what the transport and mobility markets may look like in 2030 throughout the Asia-Pacific region. In an effort to effectively understand the changing transportation landscape in the Asia-Pacific region, we sought to gather as many diverse perspectives as possible. Therefore, selected experts from industry, academia, and government from four countries in the region—specifically, Australia, Indonesia, Malaysia, and Thailand—who were considered to have diverse contextual knowledge and expertise to inform the research of the issue at hand (Roubelat, 2000) were invited to participate in an online survey. In the survey, the respondents were asked to watch three scenarios videos and complete an online survey questionnaire that was developed based on transport and mobility-related literature and industry reports.

The developed scenarios were used to facilitate thinking and challenge the respondents' existing assumptions of the energy and environmental landscape. After viewing the scenarios, the respondents were asked to evaluate how the different future outlooks could potentially impact transportation and mobility options in the future before providing their opinions about transportation in their country in 2030. At the end of the survey, the respondents were required to provide their assessment of the online survey and the digital scenarios that they had seen. Later, the findings of this survey were merged with a second survey on consumer preference such as their mobility preference and the trade-offs they are willing to consider to form a series of future scenarios that offer insights into the range of likely future mobility markets that may emerge in response to future potential government policies and fuel prices. The outcomes of the project were consolidated and compiled into reports that are intended to guide decision-making, strategy, and major transport and mobility investments for the next decade.

3. Scenarios to stretch thinking of a variety of stakeholders in rethinking the contextual environment

3.1. Conceptual overview

Kahn and Wiener (1967) state that “scenarios are hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision points” (p. 6). Scenarios are not projections, predictions, or preferences; rather, they are coherent and credible alternative stories about the future (Davis, 2002). They organise possibilities into narratives that are easier to grasp with great volumes of data on various issues, such as global economic growth, political factors, and environmental issues (Schoemaker, 1995), and illustrate the inter-relationships among key driving forces in interesting and provocative ways (Coates, 2000; Wack, 1985a). The implications of scenarios include engaging and challenging assumptions of decision makers, exploring future possibilities, stretching an organisation's thinking, and delivering imaginative information (Bradfield et al., 2005; Cornelius

Download English Version:

<https://daneshyari.com/en/article/7255227>

Download Persian Version:

<https://daneshyari.com/article/7255227>

[Daneshyari.com](https://daneshyari.com)