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Environmental Scanning: A Look to the Future

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ABSTRACT

Environmental scanning was originally conceived as a continuous evaluation methodology that identified internal and external trends that might impact an organization's success in the present and future. Best approached holistically and inductively, environmental scanning draws upon internal and external sources of information to determine the broader contextual environment in which a program, policy, or organization operates. Analyzed and reported thematically, environmental scans are used by management, evaluation commissioners, and policymakers to plan, adapt and inform program, policy, and organizational objectives, as well as the wider strategic intent. This methodology is valuable to all organization types due to its non-structured format but rigorous reliance upon a broad evidence-base upon which sound strategic and tactical decisions can be made. The purpose of this article is to provide an overview of environmental scanning and to discuss its practical applications as a rigorous methodology. Evaluators are encouraged to consider environmental scanning as a valuable addition to their toolkits to help organizations improve outcomes for programs and interventions.

1 | Introduction

Programs and interventions that evaluators are typically asked to evaluate are often designed to solve a specific problem. An organization has an idea on how to solve or improve this problem, and it competes for a limited pool of funding. Sometime afterward, an evaluation determines if and to what extent the intervention impacted on the problem. Realistically, few programs designed to solve problems exist in a vacuum. A program is often one of a suite of programs offered by an organization or institution that has its strategic vision and is potentially supporting the strategy of a larger governmental or funding agency. Individuals installed to carry out and oversee programs will often be experts in that specific context of program implementation. However, they may not understand the broader contexts (Rog 2012). In the authors' experience, while interventions are often designed with the best intentions and by individuals who are experts in the specific intervention area, designs often lack a broad understanding of the political, economic, social, cultural, technological, and countless other dimensions in which the intervention operates.

Environmental scanning is a holistic evaluation methodology that helps explain how these dimensions interact with the intervention. In this respect, it makes all stakeholders aware of external factors impacting and influencing the program both at the present and into the future. For this reason, environmental scanning can play a vital role in intervention design, evaluation, and intervention redesign following evaluation. In 1967, Francis Aguilar, a professor at Harvard Business School, defined environmental scanning as a technique "in which management gathers relevant information about events occurring outside the company in order to guide the company's future course of action" (1967, vii). Put more broadly, environmental scanning provides a holistic overview by refusing to exclude any source of data that might inform the current and future broad context (Graham et al. 2008; Mayer et al. 2013; Stoffels 1982). This definition has

since been expanded to include the ongoing tracking of trends, events, and relationships within an organization's external and internal environment to assist with strategic planning and actions presently and into the future (Choo 2001). While informal data collection and general brainstorming have always existed, environmental scanning provides a systematic and academically rigorous methodology.

At first glance, the environmental scan may appear akin to the traditional academic literature review, which could make it unattractive to some clients looking for real-world results and application. However, the two have distinct intentions. The academic literature review is designed so researchers can situate their research within the existing literature and acknowledge where the limits of human knowledge in a specific area currently lie. This allows readers to understand existing theories, frameworks, and evidence that the author is relying on or arguing against. The academic literature review is also designed to highlight where gaps in knowledge exist to showcase the importance of carrying out new research to fill this void. While it is important to remember that holism and reductionism are extremes on a spectrum (see Harris and Alderman this issue), and that realistic research and evaluation lie much closer to the center, literature reviews tend to be more reductionist than environmental scans. This is somewhat determined by the scope of the investigation and any associated research questions, but the two differ because literature reviews tend to focus on addressing the past literature related to research questions, whereas environmental scans deal with the broader issues that may be impacting research questions. As such, environmental scanning should gravitate toward source material focused on present and future realities.

Environmental scanning may also be confused with benchmarking. As discussed in Alderman and Murray (this issue), benchmarking is defined as systematically collecting comparable data points with the goal of establishing and recognizing best practice (Spendolini 1992). While environmental scanning could include benchmarking, it is not limited to seeking out specific like-for-like data to make comparisons. Environmental scanning goes beyond internal data and comparable external reference points, extending the process to include all possible external sources of information including perceptions from the organization's networks, contacts, competitors, and a raft of publicly available reporting and literature (Choo 1999; Graham et al. 2008; Poole 1990; YahiaMarzouk and Jin 2022). By expanding the focus to include the perceptions of outsiders and external sources, it provides exposure to information that may otherwise go unnoticed.

Environmental scanning has considerable overlap with horizon scanning, a concept discussed recently in the evaluation context (Dart and Gates 2024; Davies 2024; Gardner et al. 2024; Ruedy and Clark 2024; Thompson Coon et al. 2024; Tonn et al. 2024). In fact, there is likely some conflation of the two as being the same. Rightly or wrongly, the authors of this article take a specific view that the two likely share significant overlap in their procedures but differ in their intent. Horizon scanning is a methodology that has emerged from future studies (Dart and Gates 2024; Government Office for Science 2017); as such, horizon scanning is focused on evidence-informed forecasts of the future. As the title of this article suggests, environmental scanning has a look to the future but is also focused on present realities of the broader environments in which the problem is situated. In this sense, environmental scanning might be considered an introductory or lite methodology in the future studies space.

Poole (1990) suggests that the approach to conducting an environmental scan depends on the organization's size and resources allocated to the task (e.g., number of personnel allocated to the task, internal, or external consultancy). Larger organizations are more likely to establish dedicated internal teams responsible for scanning, whereas smaller organizations may rely on internal groups with broader responsibilities or engage external consultancies (Auster and Choo 1994). Moreover, larger organizations are typically influenced by a wider and more diverse range of environmental factors than smaller organizations. For example, a 2009 environmental scan conducted by the United States Army regarding their environmental policy initiative identified huge strategic issues outside the Army's control. It identified *wicked problems* (see Kealey and Alderman (this issue) and Patton (2021)) such as climate change, chemical and biosecurity issues, greenhouse gas observing, and the use of plastics (Gordon and Glenn 2009). At the other end of the spectrum, a small community college used an environmental scan to highlight opportunities and deficiencies in its instructional programs, services, and operations (Red Rocks Community College 2013).

2 | Environmental Scanning: Emerging From the Business Management Discipline

Environmental scanning has had an unusual history since its inception in the 1960s (Aguilar 1967; Poole 1990). Attributed to Aguilar (1967), his seminal book *Scanning the Business Environment* introduces environmental scanning as resting on the Economic, Technical, Political, and Social (ETPS) analysis method, a strategic method used to analyze external macro-environmental factors that can impact an organization. The ETPS method focuses on the four categories as foci for viewing, scanning, and theming. Aguilar believed these four broad environmental influences were crucial factors in understanding the current and future landscape in which an organization would operate. The method was quickly adopted by Arnold Brown of the Institute for Life Insurance, and though he did not publish on it at the time (Hassanien 2017; Rastogi and Trivedi 2016), Brown reorganized it as the STEP analysis (Brown and Weiner 1984). Since Aguilar and Brown, it has taken on variants and reorganizations, PEST and the more extended PESTLE/PESTEL (including environmental and legal domains) have become the most well-known (Hassanien 2017).

These conceptualizations are widely used by organizations to track and understand the environment in which they operate (Graham et al. 2008). PEST analysis (and its variants) has become considerably more widespread and well-known than environmental scanning, given its neat simplification. The PEST analysis provides a reasonable starting point for those new to environmental scanning, but a skilled and experienced scanner will realize the broader contextual environment can extend to aspects beyond PEST. An incomplete list of these broader influences might include cultural, ethical, competitive, geostrategic, crisis, and behavioral factors, but ultimately, key factors are determined

by the subject matter of the scan. Furthermore, the typical PEST analysis undertaken by businesses is significantly less comprehensive than the environmental scan proposed here. PEST analysis is often conducted over the space of a few hours, or perhaps days, by executives with relatively little preparation or research.

There has been slow and steady growth in the environmental scanning literature since its inception in the late 1960s (Aguilar 1967; Etzioni 1967; Keegan 1967, 1974). The timing of environmental scanning's introduction to the business literature is interesting but surprising. It aligns closely with the general movement and introduction of long-range planning tools developed by academics. Long-range planning tools are simply the tools of the strategic management discipline. The academic journal *Long Range Planning* was launched in 1968. Today, it claims to be "a leading international journal for the field of strategic management…including studies that review and assess the current state of knowledge in important areas of strategy" (Elsevier 2024). A significant wave of these tools including environmental scanning, but also SWOT analysis, the growth-share matrix (Henderson 1970) and the Ansoff matrix (Ansoff 1957) which were developed in close association with industry, emerged following the anti-monopolization legislation introduced in the United States shortly following the Second World War (Puyt et al. 2023).

The histography of long-range strategic management tools and their development is not well documented in academic literature, with the exception of the Puyt et al. (2023) article, which charts the history and development of SWOT analysis. However, it does act as an instructive piece given the emergence of these tools at much the same time. Stanford University appeared to react quickly to the need for long-range planning, setting up the Stanford Research Institute in 1946 to carry out projects supporting strategic decision-making for corporate clients (Royce 1985). Stanford would go on to recruit Robert Steward, who designed SWOT analysis throughout the early 1960s. In response to Harvard Business School lagging behind a major competitor, Aguilar was employed by Harvard during the same period. Shortly afterward, environmental scanning was designed and published, bringing Harvard Business School into the conversation regarding long-range strategic planning. It seems business disciplines moved away from environmental scanning terminology, embracing the more easily digestible PEST analysis (and its variants). However, other sectors, including health, hospitality, education, and futures have increasingly adopted environmental scanning in more recent years (Graham et al. 2008; Slaughter 1999; Solano 2013; YahiaMarzouk and Jin 2022). Moreover, it appears to be undergoing a resurgence this decade (2020s) with several new publications alluding to a link with the perceived benefits of environmental scanning and greater competitive success and adjustment during and following the global pandemic (Haarhaus and Liening 2020; Ikebujo 2020; YahiaMarzouk and Jin 2022).

Despite its design by business academics for business use, environmental scanning will likely also resonate with program evaluators and not-for-profit organizations. At its core, environmental scanning is a methodology that can support or form part of an evaluation as it identifies changes and trends used to gain competitive advantage (Dalton and Balkema 2012; Hambrick 1979). While competition may not immediately resonate with evaluators, particularly those accustomed to working for government or not-for-profit organizations, these programs are constantly competing for a finite amount of funding. Not-for-profits are unable to demonstrate value through traditional monetary means, but being able to establish alignment with and an understanding of broader environmental imperatives might be considered akin to a positive balance sheet. Quantitative methodologies, while providing neat value for money results, can be blunt instruments lacking in context, ascribing arbitrary amounts to outcomes. Environmental scanning can contextualize the environment in which programs, policies, and organizations operate and thus demonstrate a more nuanced understanding of outcomes. For example, environmental scans could contextualize low return on investment being quite remarkable given the lack of attractive alternatives. Furthermore, programs delivering impressive outcomes may be able to generate greater gains or uncover a weak signal with a holistic understanding of the broader environment.

3 | The Hunt for Weak Signals

The purpose of environmental scanning is to provide a comprehensive and holistic view of the broader environment in which the subject matter is situated. However, those conducting environmental scanning also seek to uncover weak signals: "small events that have the potential to make a big difference" (Harris and Zeisler 2002, 24–25). Weak signals are further identified by Dart and Gates (2024, 51) as "something that people believe will be strategically important in the future." The term *weak signals* appears to be a particular phraseology distinct from environmental scanning. Environmental scanning scholars do not provide clear definitions of signals, but we can infer it means some sign of future potentiality. It might be best defined as the sense that something is in its infancy or somewhat imminent. Strong signals are not mentioned, but for the sake of illustration, a strong signal would be an obvious change or innovation that most people are talking about and aware of. Weak signals, however, are often missed due to their lack of size. Ansoff (1975) insisted that all identified signals should be amplified to determine if they have the potential to become a significant event in the future. "Weak signals are weak because they are easily obfuscated by other factors, including current mind-sets, attitudes, and biases of those involved in the search for the future" (Harris and Zeisler 2002, 25). Identifying weak signals involves scanning a broad range of sources to detect subtle and often early indicators of potential change that may not yet be widely recognized but that may have significant implications for an organization's objectives (Mühlroth and Grottke 2018).

Weak signals may first appear as a vague crystal-balling concept guided purely by guessing and chance. Arguably, weak signals are becoming more difficult to detect in the current age. Original conceptions of weak signals were designed before the internet, and even 20 years ago, the availability and speed at which ordinary individuals can obtain information was unimaginable. As such, the enormous availability of data may mean genuine weak signals are easier to locate, but perhaps less weak if everyone can obtain it. However, determining the level of value to assign to a weak signal can follow a similar approach as traditional source analysis. This involves assessing the reliability of the sources, the frequency at which the signal appears, and the likelihood

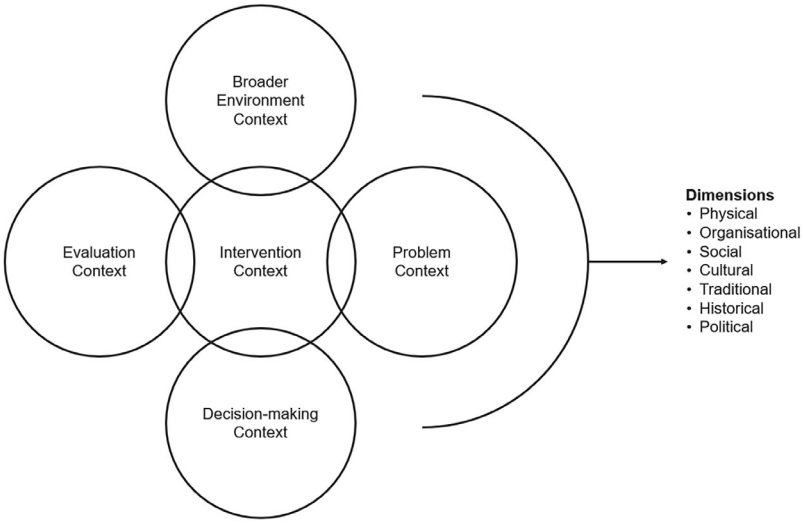

FIGURE 3.1 | Rog's (2012) bringing context into the foreground.

of its materialization within the broader context revealed by the scan. Although true weak signals will not be mentioned with great frequency across sources, or else they would not be weak. Strategies for effectively assessing these factors are discussed below in the steps to conducting an environmental scan.

4 | Conducting the Environmental Scan

There is no agreed-upon formula or process for conducting an environmental scan (Nguyen et al. 2024; Voros 2003). Individuals who regularly perform environmental scans generally develop their formula contextual to their environment and time constraints. Poole (1990) suggests that before beginning an environmental scan, it is beneficial to determine the scope of the data gathering. While this appears to be a standard approach for many research and business tasks, this can risk being limiting and reductionist. The authors have frequently found that the scope is best determined as part of the scanning process itself. This ensures something of importance and substance is not scoped out of the investigation before data collection even takes place. The rest of this section provides some guidance on how to carry out an environmental scan, despite existing literature not being in complete agreement and being somewhat vague on detail.

4.1 | Step 1: Understanding the Problem

If we use Rog's (2012) framework (see Figures 3.1 and 3.2) of contextual factors that affect evaluation practice, it is easy to see that understanding the problem is key to any evaluation tool. The entire practice of evaluation is to determine if interventions make problems better, worse, or stable. Understanding the Problem is not a complicated step; it merely requires a discussion between the commissioner of the environmental scan and the scanner. This step assumes whoever is commissioning the environmental scan has a sound understanding of the problem being addressed by the intervention. Should it become apparent that the problem is not generally well understood, it is not the primary role of the environmental scan to articulate the problem. Ideally, an environmental scan addresses Rog's (2012) broader environmental context, which provides more expansive background understanding to inform intervention design and/or evaluation. However, in the event the problem is not well understood or misinterpreted by the commissioner, environmental scans (particularly those approached inductively) can contribute to a reorientation of the problem.

4.2 | Step 2: Scoping—Inductive and Deductive Approaches

As alluded to in the first article of this issue (Harris and Alderman this issue), environmental scans can be approached deductively or inductively. One is not necessarily better; however, it is important that the scanner understands which approach they are taking, and why, and if it is appropriate. The literature provides contradictory advice regarding the best approach. Poole (1990) suggests that research questions and careful scoping are important to guide the scan. A deductive, research question-driven approach will likely feel more comfortable for the inexperienced scanner as they are continually guided and scoped by a question. However, the deductive approach could limit scanning to fields directly related to the problem, rather than those adjacent, which may or may not contain weak signals that could be missed. Moreover, a deductive approach also assumes the commissioner has a firm and evidence-informed understanding of their problem to design a useful research question. In the authors' experience, commissioners have often misunderstood the nature of the problem.

By contrast, Aguilar (1967) makes no mention of the need for research questions, and based on his written works, it is reasonable to believe he would not have advocated for them. Rather than viewing scanning as a highly structured and formalized research process, Aguilar conceptualized scanning as an open-ended and ongoing process with a focus on scanning modes (indirect viewing, formalized viewing, informal search, and formal search). Furthermore, Wong et al. (2014) believe questions are purely optional and should be dictated by the nature of the inquiry rather than a matter of procedure. As Voros (2003, 4) points out, "with a narrow scanning frame at the outset, we might not even see at

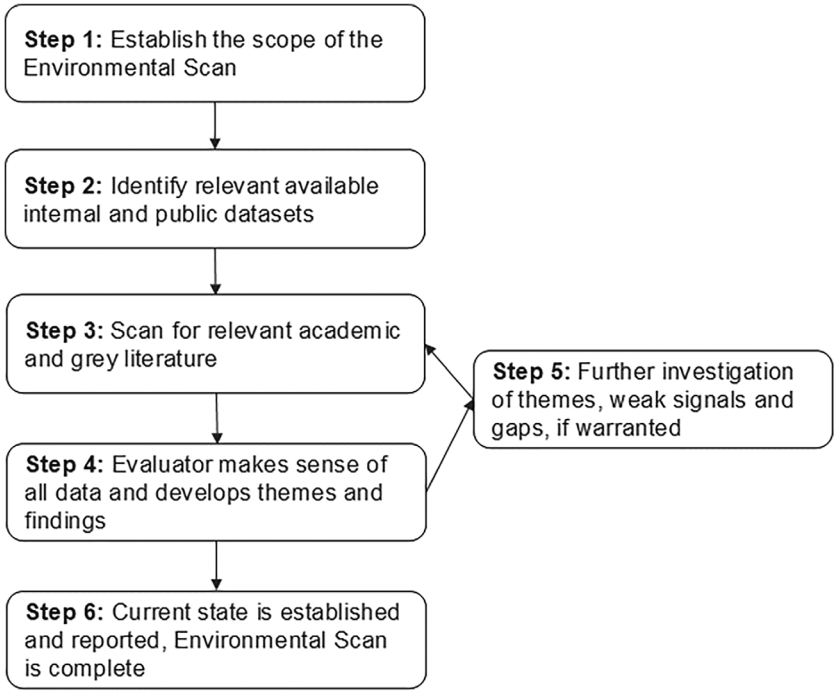

FIGURE 3.2 | Process for conducting environmental scans.

all the very signals which our scanning is supposed to detect." The authors tend to agree with Voros, believing an inductive approach is likely to yield more holistic and meaningful results. For those unfamiliar or uncomfortable with this approach, it is best driven by "what" and "why" questions, rather than "is" and "does." In the case study that follows this discussion, an inductive "why" question scopes the environmental scan—"why are professional doctorates awarded in Australia not being recognized in some European jurisdictions." The environmental scan process adopted by the regional university to answer this question is outlined later in this article.

4.3 | Step 3: Identify Data Collection and Sources

The authors of this article have almost exclusively conducted environmental scans with nothing more than a personal computer and an internet connection. The collection of some primary sources (e.g., speeches, interview transcripts, and photographs), but most frequently secondary data sources, drives this activity. Books and journal articles are the obvious starting points, but it also extends to grey forms of literature such as government reports, industry reports, news articles, press releases, unpublished manuscripts, blogs, discussion forums, and social media. Because environmental scans are centered on the present reality and the likely future, scanners should place significantly greater value on these gray forms of literature. These non-traditional sources are important, as their contemporaries reflect current realities of what is happening and plans for the future. These types of sources may be considered lacking in rigor. However, Slaughter (1999, 443) encourages the scanner to embrace this kind of source material, "thinking more broadly, more deeply and bringing into play no-traditional sources and 'ways of knowing' [to] provide new insights." Understanding the present state of macro factors impacting a program, policy, or organization will result in a better and more holistic evaluation. While the present state is constantly changing and government policy is subject to realignment at any moment, these can be considered high-quality sources for the purposes of environmental scanning. Where the traditional literature review might be considered too esoteric and rooted in the past, the environmental scan, with its sources rooted in contemporariness, relevance, and future possibility, is valuable to program intervention, design, and evaluation.

4.4 | Step 4: Viewing and Searching

There are very few authors who outline the "doing" of environmental scanning. The two steps outlined by these few authors are best summarized as viewing and searching. Choo (1999, 22) explains viewing as "looking *at* information," while searching is "looking *for* information." In the viewing stage, Aguilar (1967) suggests the scanner should look for information without any specific intention (other than the general nature of the problem). The scanner should be aware that there is a problem, and things need to be learnt and understood in order to report on the broader environmental contexts related to the problem. Ideally, the scanner will be a non-subject matter expert, unaware of the current issues and trends, as this is likely to taint the intent of this undirected scanning phase. Choo (1999, 22) provides a useful illustration of this phase by advising the scanner that while dense numbers of material should be reviewed, "the granularity of information is coarse, [and] large chunks of information are quickly dropped from attention." Further guidance is provided by thinking of viewing as a "tour" of available sources, "sensing" what it is out there and making sense of it (Choo 1999, 23). Some have suggested this viewing could be framed through a paradigm of looking for opportunities and threats (Dalton and Balkema 2012; Graham et al. 2008; Stoffels 1982). Dalton and Balkema (2012) suggest tracking events or occurrences during this

phase. Viewing ends when the scanner believes they have enough understanding of the topic to have identified the key themes and weak signals that require more detailed investigation.

If a deductive approach is taken to environmental scanning, the scanner could skip the viewing, as specific research questions will dictate what to search for. At this point, the scanner switches from searching without purpose to searching for specific information about key themes identified during viewing and possible futures to further interrogate them. The intent for the scanner here is to ensure sufficient exploration and explanation for strategic decisions to be made on the basis of findings. Furthermore, the scanner will need to investigate sentiment surrounding the future of these themes to fulfill the future-focused aspects of environmental scanning. Oftentimes, sources pertaining to forecasts and futures will have been uncovered during the undirected search, but again, directed searching will be required to fill gaps.

4.5 | Step 5: Theming and Saturation

Theming and saturation should be happening throughout all searching phases. Rather than completing a data collection phase and then entering a theming phase, after which point no further data collection will take place, a skilled scanner will start theming following the analysis of the first source. Theming for environmental scans does not need to be an arduous or complex task. It does not require the same level of rigor as thematic analysis used in qualitative research. The scanner is merely looking to group similar keywords and concepts found in data sources for the sake of synthesis and logical reporting. Although those looking to use the environmental scan methodology in a pure research context, as opposed to standard evaluation or business purposes, may find it helpful (Naeem et al. 2023).

The concept of saturation is an idea the authors borrowed from grounded theory. It controls the length of an environmental scan in terms of the timing invested and the final report. Proponents of the environmental scan from the business disciplines argue that scanning should be an ongoing and continuous monitoring activity. This might be feasible for long-term, internal evaluators, but external evaluators who work across multiple evaluations are unlikely to employ this approach. This is where saturation is important. The creators of grounded theory, Glaser and Strauss (1967), define it as a point in data collection where no further data collection will further develop the properties of the phenomenon. This does not suggest there is no further data, nor is it advocating a near enough is good enough mentality. It is a point in the data collection where the scanner has seen enough instances of the same theme that they believe it is highly unlikely they will find further insights or evidence to the contrary. Continuing might deliver more "complete" results, but Glaser and Strauss (1967) question what value the extra effort provides. It might be considered a form of observational judgement, that is, if an individual observes 1000 ducks and none of them are blue, this does not guarantee that blue ducks do not exist, but it does make it unlikely. Determining when saturation is reached is a judgment call that varies across contexts. The authors have conducted scans with as little as 50 h time investment, but note that hundreds of hours may also be feasible in some instances. What constitutes saturation in these instances will vary widely; in the former, as few as four or five sources might be enough to constitute saturation, the latter will often require significantly more.

4.6 | Step 6: Reporting

The findings are normally presented in the form of a written report. This report might be structured thematically or chronologically. Either is acceptable, and it is usually the scanner (in consultation with the commissioner) who will make a judgment about the best means to relay the information. For further guidance, the authors often ask junior evaluation staff to use the approach that tells the most compelling story, whether this be thematically, chronologically, or otherwise. Regardless of how methodical or step-by-step the environmental scanning process is, the aim is the same. It provides an objective look at issues that may allow a program or organization to gain a competitive edge, improving its effectiveness, and informing strategic decision-making. In this manner, reporting ultimately contributes to relevant and contemporary practice (YahiaMarzouk and Jin 2022).

5 | Environmental Scanning in Practice—A Case Example

In practice, the first author has found a number of weak signals as a result of environmental scanning techniques. As the manager of evaluation methodologies at a regional Australian university, the first author supports academic program reviews and reaccreditation. The Australian regulatory body—the Tertiary Education Quality and Standards Authority (TEQSA)—requires programs be evaluated every 5–7 years for standards and improvement (Higher Education Standards Framework (Threshold Standards) 2021). Rather than take a myopic and internal-only view at these programs (which is essentially all TEQSA requires), the university has made an investment in the first author's skills to undertake environmental scans of the academic disciplines associated with these programs to support a more holistic evaluation. Additionally, looking for and locating weak signals provides evidence for strategic decision-making under uncertain, risky, and competitive market conditions.

What follows is a case example from the authors' practice mapped against the process for conducting an environmental scan outlined above. A request for a higher degree research program environmental scan was received following an enquiry of a professional doctorate alumnus whose Australian doctoral qualification was not being recognized in Switzerland.

Step 1: Understand the problem: The problem was clearly an issue of recognition and equivalence for higher degree research programs internationally. The broader environmental context required understanding if, and to what extent, Australian and Swiss higher degree programs are different.

Step 2: Scoping—Inductive and deductive approaches: This environmental scan was driven by a "why" question. Why does Switzerland not recognize the Australian professional doctorate as a doctoral-level qualification? There was no hypothesis driving this enquiry, the source material would lead the scanners to the appropriate conclusions.

Step 3: Identify data collection and sources: The scan focused on materials that articulated qualification frameworks in Australia and Europe. This included legislation, policy, and other government and regulatory documentation. Academic journal articles and books were also consulted to ensure interpretation of these complex legislative and regulatory environments was properly understood.

Step 4: Viewing and searching: Professional doctorates were established in the 1980s alongside the existing Doctor of Philosophy (PhD), as the two highest degrees attainable in Australia. Australian higher education in the 1980s was dominated by the *Dawkins Reforms*, which were aimed at providing mass education for the populace to stimulate employment and economic growth (Ewee 2010; Wildy et al. 2015). Professional doctorates were designed to be undertaken while candidates worked in industry and were ideally focused on research, which could be conducted as a part of a person's employment (Malloch 2010). The intention was to develop more researchers in industry contexts, rather than traditional academia. It was also feasible for candidates to undertake their studies part-time and externally, as industry-driven research required less time in university libraries, archives, and laboratories—the reality of undertaking academic research prior to readily available high-speed internet. As such, with the advent of internet availability and online research repositories, the professional doctorate lost a sense of differentiation, as the traditional PhD could be undertaken with greater flexibility.

The major breakthrough of this scan was made through the investigation of the Swiss higher education environment. The enquiry of the alumnus was quickly validated as Switzerland was confirmed as a jurisdiction where professional doctorates are not recognized (Swiss Universities 2019). As such, professional doctorates would be ignored, and individuals with them would be assessed on their next highest undergraduate or postgraduate degree. While Switzerland is not a member of the European Union, it is a signatory to the Bologna Process, a legislative educational system aiming to create uniformity and borderless higher education recognition across the European Union and other signatory countries (European Commission 2022). As such, while the Swiss precedent could not be seen as adopted by the rest of the signatories at the time of the scan, the prospect of this permeating across all of the European signatories (of which there are many) would essentially make Australian professional doctorate graduates unemployable in Europe.

Step 5: Theming and saturation: Led by the weak signal out of Switzerland, the scan had three key themes, all hitting saturation relatively quickly. First, the risk of the programs not being recognized in most of Europe. Second, their initial creation was to address a historical problem that no longer exists. Finally, additional data sources available to Australian universities showed a long trend of falling enrollments in these programs across most Australian universities. Despite strong messaging from the Australian regulators in its infancy, the professional doctorate never gained the same level of legitimacy as its relative, the Doctor of Philosophy.

Step 6: Reporting: Although professional doctorates were supported by the higher education sector in Australia, the concern raised by an alum that their qualification was not recognized in Switzerland was validated by the evaluators to be a weak signal that suggested change was on the horizon. When this is combined with the national trend of diminishing enrolments and universities turning off their professional doctorate programs, the environmental scan was pivotal in providing the executive with a clear current state of these programs (Brown et al. 2021). This in turn, supported the university executive to make the strategic decision to discontinue these programs immediately.

6 | Limitations and Challenges of Environmental Scanning

As useful and beneficial as an environmental scan is in identifying potential changes in the surrounding environment, there are associated challenges that must be acknowledged. The key issue is controlling the amount of data collected. In a perfect world, every possible source of related information would be collected and analyzed in the viewing and searching phases of the scan, as there is always the risk of missing valuable insights (Mayer et al. 2013). Extending this beyond the traditional confines of published works to gray literature, news articles, and even interviews and focus groups, means data collection could be endless. This comes with the consequence of environmental scanning becoming a never-ending task, never providing insights that can be actioned. One method to overcome this is a narrowly scoped, deductive approach, which will at least control the breadth of data collection. However, for holistic and inductive approaches, which the authors prefer (when suitable for the context), the scanner will need additional techniques. This could start with a simple, self-imposed time limit on data collection. For example, what is feasible to collect in 100 h? While this might seem unscientific, it will be a reality for many evaluators who ultimately have deadlines to meet. Realistically, while perceived incomplete environmental scanning could have consequences for gaining an upper hand against competitors, it is unlikely to do harm to commissioners or participants of a program. Any additional data gathered to inform the broader environmental contexts will only strengthen the evaluation. Additionally, key trends should be quickly surfaced in the scanning process even if the scan is incomplete.

Another issue prevalent in the literature is concerns around researcher bias (Hambrick 1979; Voros 2001). This may appear odd, but it is probably related to its history as a business and applied evaluation methodology. Many of its intended users may not have undergone formal research training where researcher bias is explored at length. To that end, Aguilar (1967) wrote about the scanner's recognition of relevant information being colored by their own awareness of the issues of actual or possible importance and their ability to comprehend the uncovered information. Their unintentional distortion of what is heard, recorded, and interpreted due to the possible limitations and biases of the environmental scanner must also be acknowledged. Auster and Choo (1994) echo Aguilar's concerns, writing about the limitations of the scanner, while Voros (2001) notes the necessity for the scanner to be aware of how they perceives the world and the types of filtering they brings to the process. Hambrick (1979) addresses the concern that if the scan is based on one's specific interests rather than designed to take an overview of current events, the results are likely to be shaped by a personal bias. If that were

to occur, Hambrick (1979) sees the potential for important data being missed during the collection phase. While counterintuitive, the authors vehemently agree with Hambrick on this point. As firm believers in multidisciplinary evaluation teams, the authors have always advocated that non-discipline experts should conduct environmental scans to avoid the possibility of finding predetermined or pre-conceived trends. Discipline experts still have an important role to play in sense checking and reviewing reports prior to distribution to clients, but should avoid leading the scan itself.

Environmental scanning, as presented throughout this article, has a different strategic orientation from the previous article on benchmarking (see Alderman and Murray 2025). While benchmarking needs to be brought up to the strategic level by virtue of policy borrowing, environmental scanning, as evidenced through the business literature from which it emerged, naturally operates at the strategic level. It was designed to give organizations an understanding of the broad environment in which they are operating presently and into the future. Armed with this knowledge, evidence-informed decisions can be made regarding strategy to remain or become more competitive in said environment. While this might not immediately resonate with program evaluators, in the event they are asked into the strategic space during or following the evaluation, this is an excellent methodology to apply. Furthermore, there is little reason why the environmental scan cannot be equally useful at the tactical or program level. Programs do not exist in a vacuum, and understanding the broader contexts that impact on them can only result in greater evidence-based decision-making for their ongoing or renewed delivery.

7 | Conclusion

Environmental scanning is an extensive, future-focused process that asks the scanner to gather information about present and future states from all sources, internal and external, to identify potential opportunities and threats to programs, policies, and organizations. First written about in the late 1960s, and with no formal structure, the key ingredients to success are a holistic and inductive approach and access to any and all data that may impinge on broader environmental contexts in which the program, policy, or organization operates. This will assist in intervention design, evaluation, and intervention redesign following evaluation. Interpreting this data requires an experienced scanner to identify emerging themes that are then presented to decision makers to determine what can and will be acted upon for the sake of the program, policy, or organization. Environmental scanning, particularly when offered by a multidisciplinary evaluation team as an evaluation methodology, adds significant value to improving outcomes for programs, policies, and organizations which warrants the considerable time and resource investment that can come with this activity.

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