

# Plausible scenarios for the radiography profession in Sweden in 2025



B. Björkman<sup>a,\*</sup>, K. Fridell<sup>b</sup>, P. Tavakol Olofsson<sup>c</sup>

<sup>a</sup> Jönköping University, School of Health and Welfare, Department of Natural Science and Biomedicine, P.O. Box 1026, 551 11 Jönköping, Sweden

<sup>b</sup> Karolinska Institutet, Clinical Science, Intervention and Technology 171 77 Stockholm, Sweden

<sup>c</sup> Vårdförbundet Box 3260, 103 65 Stockholm, Sweden

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## ABSTRACT

**Introduction:** Radiography is a healthcare speciality with many technical challenges. Advances in engineering and information technology applications may continue to drive and be driven by radiographers. The world of diagnostic imaging is changing rapidly and radiographers must be proactive in order to survive. To ensure sustainable development, organisations have to identify future opportunities and threats in a timely manner and incorporate them into their strategic planning. Hence, the aim of this study was to analyse and describe plausible scenarios for the radiography profession in 2025.

**Method:** The study has a qualitative design with an inductive approach based on focus group interviews. The interviews were inspired by the Scenario-Planning method.

**Results:** Of the seven trends identified in a previous study, the radiographers considered two as the most uncertain scenarios that would have the greatest impact on the profession should they occur. These trends, labelled “Access to career advancement” and “A sufficient number of radiographers”, were inserted into the scenario cross. The resulting four plausible future scenarios were: The happy radiographer, the specialist radiographer, the dying profession and the assembly line.

**Conclusion:** It is suggested that “The dying profession” scenario could probably be turned in the opposite direction by facilitating career development opportunities for radiographers within the profession. Changing the direction would probably lead to a profession composed of “happy radiographers” who are specialists, proud of their profession and competent to carry out advanced tasks, in contrast to being solely occupied by “the assembly line”.

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## Introduction

This study is an extensive review of trends that have the potential to predict the future of the radiography profession in Sweden in 2025. The two most uncertain trends among those outlined in a previous study<sup>1</sup> were identified and used to construct four possible scenarios that predict the future of the radiography profession in Sweden.

Radiography is a healthcare speciality with many technical challenges.<sup>2</sup> Radiography technologies and procedures are developing and the potential for new forms of treatment in the future seems unlimited.<sup>3</sup> The expansion of technology in advanced modalities and hybrid machines that combine the physiological processes of positron emission tomography (PET) with morphology from magnetic resonance imaging (MRI) and computed

tomography (CT) provides more varied opportunities for diagnosing illnesses, while technological improvement in radiological imaging has enabled images to be post-processed,<sup>4–6</sup> thus expanding radiographers' area of responsibility.

The above-mentioned advances include the introduction of digital imaging and increased use of the digital imaging Picture Archiving and Communication System (PACS).<sup>6</sup> The greater demand for advanced radiological examinations and ease of communication via the Internet has influenced radiographers' task assignments, skills and role.<sup>7,8</sup> The world of diagnostic imaging is changing rapidly and radiographers must be proactive in order to survive.<sup>9</sup>

### Predicting the future – a key aspect of planning

Good planning requires a vision of the future. Planning implies studying what might happen in the future to ensure that companies and organisations take the right actions in order to be successful.<sup>10</sup> One of the most difficult tasks in any organisation is creating a strategy that will meet future challenges.

\* Corresponding author.

E-mail addresses: [berit.bjorkman@ju.se](mailto:berit.bjorkman@ju.se) (B. Björkman), [kent.fridell@ki.se](mailto:kent.fridell@ki.se) (K. Fridell), [parvin.olofsson@vardforbundet.se](mailto:parvin.olofsson@vardforbundet.se) (P. Tavakol Olofsson).

To ensure sustainable development, organisations have to identify future opportunities and threats in a timely manner and incorporate them into their strategic planning.<sup>3,11</sup> Managers should endeavour to provide multiple perspectives describing a variety of possibilities.<sup>12,13</sup> It has been demonstrated that the Scenario-Planning method may serve as a management strategy and useful tool in any field and that it has the potential to consider multiple strategy options and take several perspectives into account.<sup>14,15</sup> The method is often employed to explore the actual situation in anticipation of specific threats, such as technological challenges within an industry or healthcare system as well as environmental or political changes.<sup>16,17</sup> It has also been shown that Scenario-Planning can provide a deeper understanding of the inherent variability of any company, organisation or profession.<sup>18–20</sup>

The organisational planning processes employed by healthcare executives have been fundamentally transformed over the last decade,<sup>14</sup> one major motive being that the healthcare industry itself has undergone rapid change. Scenario-Planning has been used in healthcare environments and organisations in recent years.<sup>21,22</sup> The complexity of healthcare requires planning. In this regard Scenario-Planning has an outstanding ability to create a clear sense of direction. At the same time the method provides an understanding of weaknesses and strengths and helps capture a whole range of prospects.

A variety of views of the future enable us to explore the potential consequences of different trends. This study builds on Scenario-Planning, which has the potential to predict four plausible scenarios for the radiography profession in the future. The aim of this study was to analyse and describe plausible scenarios for the radiography profession in 2025.

## Methodology

In brief, Scenario-Planning is a process of visualising the future in terms of the following issues: What future conditions or events are plausible?, What would be likely scenarios when unlikely trends occur?, and How can one respond to or benefit from these trends? (Fig. 1). The process of visualising the future often begins with; considering a range of plausible futures that include significant uncertainties, exploring future consequences of a decision and integrating alternative perspectives into management planning when scenarios with uncertain trends occur. Moreover, avoiding a potential risk or threat and benefiting from possible opportunities by means of a forum for policy making and evaluation enhance the ability of a company or an organisation to manage and take advantage of future change.<sup>19,23–26</sup>

## Method

*“If you don't know where you're going, any road will take you there.”*

*(The lyrics of the song ‘Any Road’ by George Harrison)*

## Design

The study has a qualitative design with an inductive approach based on focus group interviews.<sup>27</sup> In order to explore, from the

trends to four plausible futures, focus group interviews were considered the best method for data collection as they promote discussion and consensus. The interviews were inspired by the Scenario-Planning method.<sup>19</sup>

Rather than just predetermining one possible future scenario, Scenario-Planning visualises several plausible ones. In the final analysis, the method will provide an understanding of which of them is the most likely.<sup>22,23</sup>

## Data collection

Eleven focus group interviews were conducted. The size of the groups ranged from four to five radiographers. In total, 48 registered radiographers working in 11 different diagnostic radiology departments throughout Sweden participated. The focus group sessions were chaired by one of the authors, who was supported by an observer on nine of the eleven occasions. The observer took notes and assisted in capturing and summarising points of particular relevance to the aims of the study.

The interviews followed the modified Scenario-Planning method. Steps 1–7 below illustrate the process from the identification of trends to the construction of a Scenario Cross describing the four plausible futures.

1. Description of trends that have influenced current radiography practice.
2. Description of trends that will continue to shape the future of the radiography profession.
3. Overview of emerging trends that may influence the future of the radiography profession.
4. Summary of the described trends.
5. Evaluation of trends based on their plausible impact on the radiography profession.
6. Selection of the two trends considered the most “uncertain”, but which, if they materialize, will have a major impact on the radiography profession in the future.
7. Creating the Scenario Cross describing four plausible scenarios.

Based on the created Scenario Cross, respondents were asked to choose the most desirable as well as the most likely future scenarios (Fig. 2).

The results of the Scenario Cross are presented in four different scenarios, where scenario A is formed by *Trend 1+* and *Trend 2+*, scenario B by *Trend 2+* and *Trend 1–*, scenario C by *Trend 1+* and *Trend 2–* and scenario D by *Trend 1–* and *Trend 2–*.

## Data analysis

The 11 focus group interviews resulted in 22 trends described by the radiographers as the most uncertain, hence, if they materialize, will have the greatest impact on the profession. The trends were compared and organized into the two most uncertain ones and the two with the greatest impact on the profession (Fig. 3).

The result produced by the Scenario-Planning method is a description of four plausible futures. These future scenarios are based on two trends and the content of each scenario is based on seven principles as mentioned above. The description should be a

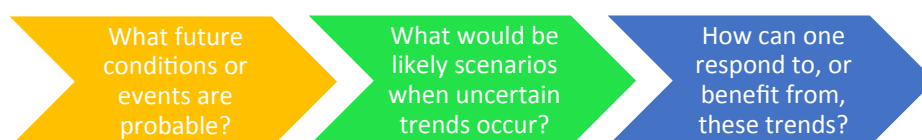


Figure 1. The process of visualizing the future using Scenario-Planning.

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