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The impact of sectoral changes on individual competences: A reflective scenario-based approach in the creative industries

Martin Kamprath [a,*], Dana Mietzner [b,1]

[a] University of Potsdam, August-Bebel Strasse 89, D-14482 Potsdam, Germany
[b] Technical University of Applied Sciences Wildau, Hochschulring 1, D-15745 Wildau, Germany

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ABSTRACT

Many foresight studies concentrate on technological foresight and its impact at the organizational level. However, often these studies overlook the soft factor of employee competences which is critical to adopting technological and organizational changes and to developing the necessary innovation capabilities. This study investigates the theoretical and methodological underdeveloped relationship between technological innovation and social initiated change and the impact on individual competences in a dynamic sector. The setting of our study is the turbulent creative industries as a whole, where creative and artistic expression merges with changing technological progress. In a scenario study we mainly conducted in 2010, we developed a scenario model for competences to combine individual competences with a scenario approach to investigate how competences are important to the sector shift or need to be enhanced in the future. We use primary qualitative data from expert interviews and workshops and secondary data from industry reports to identify thirty-seven influence factors. An influence matrix calculation and a cluster analysis are used to project three different scenarios presenting how future developments of the creative industries will influence the competences needed for creative occupations. Now, five years later, we reflect the accuracy of the developed scenarios via a comparison of today's situation with the situation in the scenarios. We discuss theoretical contributions for the foresight literature and practical implementations for the future of work in general, and in particular for the creative industries case.

1. Introduction

Foresight studies use various levels of analysis to explain changes and impacts to forecast market and technological developments with the aim of initiating a long-term strategy development process. But in foresight studies, the individual level is often neglected in terms of how employees' and managers' competences and skills must be developed to cope with future industry changes. Only a few studies in the foresight field highlight the important roles of individual competence and skill development to handle technological and organizational changes (Mechling, 2004; Wymbs, 2012; PricewaterhouseCoopers, 2009a). Although research and practice show that individual, organizational and industry levels are closely connected (Chadwick and Dabu, 2008; Teece, 2007), literature streams that link strategic management and human resource management have not been integrated in foresight literature to a large extent. The absence should be seen as a problem because studies from various disciplines suggest that employees are a key factor in company development, regional clusters, and innovation systems (e.g., the Creative Class

* Corresponding author. Tel.: +49 331 977 4500; fax: +49 331 977 3425.
E-mail addresses: Martin.Kamprath@ime.uni-potsdam.de (M. Kamprath), Dana.Mietzner@th-wildau.de (D. Mietzner).
[1] Tel.: +49 3375 508 199; fax: +49 3375 508 884.

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discussion by Florida (2002)). A recent survey by PriceWaterhouseCoopers among 1300 CEOs worldwide illustrates that in the face of the main future transition trends, the lack of skilled people is seen as the major threat to economic growth and should be the highest priority on the companies' and policy makers' agendas (even before ensuring financial sector stability and developing an innovation ecosystem) (PricewaterhouseCoopers, 2014). Also management literature indicates that the development of employee competence is essential in rapidly changing industries for enterprises to adapt to volatile environments (Amadi-Echendu, 2007; Ployhart, 2006). From such a perspective, the resource-based theory (Wernerfelt, 1984) is extended to the microfoundations of the firms (Teece, 2007). Here, the theory of human capital resource (HCR) offers a multilevel perspective to conceptualize how companies benefit from their human resources (Ployhart and Moliterno, 2011).

The development of individual competences for future challenges is relevant in industries where digitalization changes the way products are developed, manufactured, distributed, and consumed, and hence knowledge has a short half-life (Goldkind and Wolf, 2014). These affect a range of sectors starting from more traditional manufacturing industries and retail to life sciences, renewable energy and the ICT sector. Important to firms and education and training institutions, the question arises how to develop and formulate demands of future competences, given that training content and education today needs to fit the future working demand (Havas, 2009; Harper and Georghiou, 2005). For this reason, specific techniques are required in order to forecast the future demand for competences.

To address this research gap, our research setting is the creative industries. In this conglomerate of creative sub-sectors (Potts and Cunningham, 2008; Cunningham, 2002) the impact of technological change on individual competences is highly visible and challenging, because creative and artistic expression merges with changing technological progress. Because of technology unleashing (e.g., devices, infrastructure, applications), even sector professionals find it difficult to keep pace with the frequent emergence of new technological developments, new services, new business models, new user behavior, and competition between more traditional media companies and companies with their origins in the Internet (PricewaterhouseCoopers, 2014; McKelvie and Picard, 2008; Bartosova, 2011). Research in this area offers interesting transferable implications for other sectors because, first, the cultural-creative sector is deeply embedded and contributes to the innovation performance of the overall economy (Bakhshi and McVittie, 2009; Müller et al., 2009). Second, creative occupations are not limited to creative industries. Occupations with a high level of creative skills are found outside the creative industries (Cunningham, 2011; Bakhshi et al., 2013).

Existing studies about the creative industries show that on the one hand the creative industries have been the object of research for foresight projections. These studies analyze current developments to make future projections but focus on complex technological developments and new business concepts e.g., (Cassarino and Geuna, 2008; European Commission, 2009; Haasis and Buchholz, 2009; Marcus, 2005; PricewaterhouseCoopers, 2011). On the other hand, studies already have analyzed competence and skill developments and identified competence gaps between education and practice in this sector (Ashton, 2011; Bauer et al., 2011; Bridgstock, 2011; Dobrunz et al., 2006; Haukka, 2011). But in the field dynamics of business environment changes could be better considered. Environmental dynamics are taken as fixed endogen parameters, and the companies examined in these studies often reveal current demand for competences. Sometimes a future perspective is included by asking for the firm's future demand (Sigmund, 2006), which can lead to inconsistent future projections because every respondent has a subjective, individual opinion regarding future developments.

Motivated by the manner in which technological and social changes affect business environment change, our aim is to develop a theoretical and empirical understanding of how industry changes influence people working in technology-driven sectors.

Therefore, we will investigate the theoretical and methodological underdeveloped relationship between technological innovation and social initiated change and the impact on individual competences in a dynamic sector. This question poses certain methodological challenges, especially because competences for job positions are difficult to quantify and pictures of the future must be consistent to derive conclusions. Thus, we use a scenario-based methodological approach that captures the relationship between specific industry conditions and required individual competences and skills.

This paper builds on a scenario research project we mainly conducted in 2010 for a scenario horizon for the year 2015. This time horizon has been reached, which gives this article a unique opportunity to include our initial considerations and frameworks and to add a scenario evaluation from today's perspective. The reflective evaluation of the study results suggest that real-world developments were covered largely by the first of the three scenarios. However, we also discuss developments for individual competences we did not anticipate at that time. We conclude that the picture of the future is incomplete if firms only regard their foresight activities toward technological and market developments and neglect interlinkages to human resource development.

With the research, we contribute to the field of foresight studies in the first line while integrating a theorizing link between the individual level in the firm and the response to environmental changes using a microfoundations of dynamic capabilities perspective (see also the call to embed more strategy theories in foresight (Vecchiato, 2014). From a theoretical perspective, we contribute to the field of individual competence development and strategic perspectives of the firm while extending the multi-level theory of HCR to foresight literature (Ployhart and Moliterno, 2011; Nyberg et al., 2014; Wright et al., 2001). Hence, we develop our argument for a complementary perspective in foresight literature that centers more on the individual. As a result, we implement a corresponding scenario approach.

We also contribute to the existing literature on creative labor (Florida, 2002; Hesmondhalgh and Baker, 2011; Christopherson, 2009) while we add a dynamic, future-focused perspective to the competence and skill discussion in creative industries. For practice, the theoretical anchored methodology addresses the needs of firms and education providers (e.g., universities and colleges) to think about future competences in creative occupations to cope with upcoming sectoral changes.

Our article is structured as follows: The next section describes relevant literature perspectives (1) by stressing competences of