



(RESEARCH ARTICLE)



Impact of ICT on forward-looking job and skills management: Analysis of Noria effects at Vodacom Congo

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World Journal of Advanced Research and Reviews, 2026, 30(02), 388-392

Publication history: Received on 17 March 2026; revised on 04 May 2026; accepted on 06 May 2026

Article DOI: <https://doi.org/10.30574/wjarr.2026.30.2.1208>

Abstract

This article explores the impact of Information and Communication Technologies (ICT) on forward-looking job and skills management (GPEC), focusing on the analysis of Noria effects at Vodacom Congo. ICT promotes the digitization of human processes within this company in the Democratic Republic of Congo, allowing for better evaluation and planning of skills. Through centralized tools, the company can quickly adapt its strategies to labor market changes and improve internal communication. Initiatives such as online training strengthen employee engagement. However, this article also highlights the challenges related to the adoption of new technologies and data security. The integration of ICT presents significant optimization potential for the management of all telecommunications companies in general, and Vodacom Congo in particular.

Keywords: GPEC; ICT; Noria Effects; Vodacom Congo

1. Introduction

1.1. Background and justification

ICT has become indispensable in the telecommunications sector, particularly for large companies like Vodacom Congo, which operates in an environment characterized by rapid technological change and increased competition. The use of ICT optimizes operations, improves productivity, and strengthens competitiveness through integrated management tools and digital platforms. For a company the size of Vodacom Congo, ICT plays a key role in digital transformation and the modernization of internal processes, facilitating skills management and overall organizational performance (Castells, 2009).

GPEC is a strategic approach that enables companies to anticipate their skills and job needs in the medium and long term. This forward-looking management is essential for companies operating in a constantly evolving technological environment, as is the case for Vodacom Congo. By integrating GPEC, Vodacom Congo can anticipate changes in the skills required to meet new technological challenges and market demands (Ulrich, 1997).

Noria effects refer to the continuous cycle of inputs (new hires, training) and outputs (retirements, resignations) of skills within a company. This concept is particularly relevant in companies where skills evolve rapidly, particularly due to technological changes. At Vodacom Congo, ICT accelerates this cycle by constantly creating new skill needs. Noria effects illustrate how the company must manage this permanent flow to avoid loss of know-how and guarantee the availability of strategic skills (Beguin & Clot, 2004).

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ICT directly contributes to these phenomena by making certain skills obsolete while demanding the rapid development of others, particularly in the areas of network management, cybersecurity, and digital services. In this context, managing Noria effects becomes crucial to ensure business continuity and adaptability.

1.2. Problem statement and hypotheses

The impact of ICT on GPEC is becoming increasingly crucial in the telecommunications sector. The integration of new technologies disrupts working methods, accelerates the evolution of skills, and requires rapid adaptation of employees. In the case of Vodacom Congo, digital transformation raises several questions:

- How do ICT influence GPEC at Vodacom Congo?
- What are the specific effects of ICT on skills management and Noria effects?
- **Hypothesis 1:** ICT have a significant positive impact on GPEC at Vodacom Congo by facilitating the planning and development of skills required to meet constantly evolving organizational needs.
- **Hypothesis 2:** The integration of ICT into GPEC helps accelerate skills renewal (Noria effects) due to the frequent need to update know-how and new technological requirements.
- **Hypothesis 3:** Digital tools improve responsiveness and accuracy in identifying skills needs, but they also increase pressure on employees to keep their skills up to date, which influences turnover rates and the continuous learning cycle.

1.3. Objectives

The main objective is to understand how ICT transform GPEC practices at Vodacom Congo. The specific objective is to examine how ICT affect the skills acquisition and loss cycle (Noria effects) in the context of Vodacom Congo.

2. Methodology

2.1. Research approach

For this study, we focused on a case study based on the analysis of skills and employment management practices at Vodacom Congo (Yin, 2003). A case study is relevant here because it allows an in-depth exploration of GPEC practices specific to Vodacom Congo and an analysis of how the organization uses ICT to adapt its human resources to technological challenges.

2.2. Data collection techniques

Data collection techniques included:

- Semi-structured interviews with human resources managers
- Analysis of internal documents (HR reports, skills assessments, performance evaluations)
- Analysis of statistics on training, skills rotation, and retention rates

2.3. Data analysis

The analysis combined qualitative and quantitative approaches (Eisenhardt, 1989; Miles & Huberman, 1994).

3. Results

3.1. Evolution of skills management with ICT at Vodacom Congo

3.1.1. Presentation of Vodacom Congo

Vodacom Congo is a major player in the telecommunications sector in the Democratic Republic of Congo. Due to the rapid growth of the sector and technological pressure, the company has developed an HR strategy focused on adaptation and innovation. This strategy is based on continuous improvement of employee skills to meet market demands and the integration of ICT into HR practices to increase efficiency.

3.1.2. Transformation of HR practices with ICT integration

The integration of ICT into Vodacom Congo's HR practices has modernized and optimized skills management. Talent management software facilitates skills assessment and career path monitoring, while e-learning platforms enable continuous training, particularly on technical and digital skills. Collaborative tools have also transformed teamwork, fostering innovation and internal communication (Vodacom Group Annual Report; Huselid, 1995).

3.2. ICT and skills renewal (Noria effects)

3.2.1. Impact of digital tools on the constant need for technical and managerial skills renewal

The implementation of ICT has increased the speed of skills renewal at Vodacom Congo, as technological advances require frequent knowledge updates. Employees must regularly acquire new skills, particularly in network management and cybersecurity, to remain effective in the face of changes in the telecommunications sector.

3.2.2. Examples of training and upskilling programs

To respond to technological developments, Vodacom Congo has implemented continuous training and upskilling programs. For example, e-learning courses and advanced training workshops for managers enable them to acquire advanced technical skills and management abilities. These initiatives aim to reduce skills obsolescence and limit Noria effects (KPMG, 2020; Dyer & Reeves, 1995).

3.3. Case studies and internal testimonies

3.3.1. Testimonies from Vodacom Congo HR managers

HR managers at Vodacom Congo emphasize that ICT have transformed the way skills are evaluated and developed. Testimonies collected from managers and HR leaders indicate that ICT facilitate the identification of skills gaps and enable a faster response to fill these needs.

3.3.2. Interview results

The interviews conducted also reveal the challenges of digital transformation, particularly the need for continuous training and the difficulty of retaining talent in a constantly evolving sector. Testimonies show that although ICT improve productivity and access to training, they also require increased efforts from employees to remain competitive.

4. Discussion

4.1. Positive effects of ICT on GPEC

4.1.1. Improved responsiveness to changing labor market needs

ICT enable companies to quickly adapt their skills strategies according to market fluctuations. Modern HR software facilitates real-time data analysis, helping managers anticipate skills needs, plan targeted training, and hire new talent at the right time. This gives companies greater flexibility and faster adaptability to technological innovations and market changes (Boxall & Purcell, 2003).

4.1.2. Facilitation of real-time skills and career path monitoring

Through talent management platforms, companies can continuously track employee skills and identify professional development opportunities. These tools provide a global and up-to-date view of available skills, simplifying career planning and monitoring employee progress. For example, dashboards and reports generated by GPEC systems allow HR managers to identify skills gaps and adjust training programs in real time (Lepak & Snell, 1999).

4.2. Limitations and challenges of ICT in skills management

4.2.1. Resistance to change and lack of digital skills

The implementation of ICT in skills management can meet resistance, particularly among employees less comfortable with digital technologies. Some may have difficulty adapting to new management tools or online training platforms, which can hinder the effectiveness of ICT in GPEC. Companies must then invest in training programs to improve digital literacy and encourage adoption of new technologies.

4.2.2. Risks of dehumanization of human resource management

Excessive use of ICT can sometimes dehumanize HR processes, transforming interactions into simple data exchanges and limiting personal contact. This can create a distance between HR managers and employees, reducing listening and individualized support. Although ICT increase efficiency, they can also lead to human detachment that may reduce employee motivation and engagement (Rifkin, 1995; Senge, 1990).

4.3. Theoretical implications

The results confirm that ICT, as a driver of transformation, redefine GPEC at Vodacom Congo by influencing the skills lifecycle and human resources planning. The challenge for the company is to implement management strategies that bridge the skills gaps induced by technological changes, while effectively managing Noria effects to maintain a team competent and adapted to new requirements.

5. Conclusion

The study demonstrated that ICT play a key role in optimizing GPEC at Vodacom Congo, promoting better adaptation to rapid changes in the telecommunications market. They not only improve the efficiency of skills management but also better anticipate future human resource needs. However, the impact of ICT on Noria effects (skills rotation) presents challenges, such as the constant need for skills renewal and adaptation difficulties for some employees.

The telecommunications sector being strongly influenced by innovation, ICT facilitate continuous training and upskilling of employees, while making talent management more dynamic and responsive. However, ICT also require increased attention to effectively manage generational diversity and the adoption of digital skills at all levels of the company.

5.1. Recommendations

- **Continuous training:** Strengthen training programs to support employees in acquiring digital skills and using ICT tools, including online modules and face-to-face workshops.
- **Generational diversity management strategies:** Adapt training programs to meet the needs of different generations within Vodacom Congo. For example, younger employees could benefit from more advanced technology training, while older employees could receive introductory training and more personalized support to facilitate adoption of digital tools.
- **Support for digital skills:** Implement initiatives to increase digital literacy, such as internal ICT certifications and coaching programs to strengthen digital skills.
- **Implementation of mentoring and skills transfer programs:** Structured mentoring programs would allow experienced employees to transmit their knowledge to new talents. By encouraging this skills sharing, the company can limit Noria effects by retaining critical know-how while facilitating the integration and skills development of new recruits.
- **Broader studies on other telecommunications companies in Africa:** Comparative research including other telecommunications companies on the African continent would offer a broader view of GPEC practices in the sector and the impacts of ICT on skills management in the African context.
- **Exploration of the impact of ICT on other aspects of human resources:** Future research could also explore the impact of ICT on areas such as performance management, well-being at work, and employee engagement.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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