Izzivi obvladovanja sprememb v laboratorijih

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Povzetek

Raziskovalno vprašanje (RV): Preskuševalni in kalibracijski laboratoriji nenehno posodabljajo in nadgrajujejo svojo merilno opremo. S kakšnimi tveganji in izzivi se srečujejo pri tem?
Namen: Ugotavljali smo, kako preskuševalni in kalibracijski laboratoriji v Sloveniji obvladujejo spremembe pri nadgradnji in/ali zamenjavi svoje merilne opreme. Raziskava odgovarja na vprašanja, s katerimi se soočamo pri tehnoloških spremembah merilne opreme in celovitem upravljanju kakovosti v laboratorijski dejavnosti.
Metoda: Kot instrument za pridobivanje potrebnih informacij smo uporabili za ta namen razvit vprašalnik. K sodelovanju smo povabili predstavnike iz 86 kalibracijskih in preskuševalnih laboratorijev, ki v Sloveniji izvajajo akreditirano dejavnost skladno z SIST EN ISO/IEC 17025 in so akreditirani pri Slovenski akreditaciji. Za vrednotenje podatkov, smo poleg opisne in frekvenčne statistike, uporabili nekatere neparametrične statistične teste.
Rezultati: Sodelujoči so v januarju 2021 vrnili 56 v celoti izpolnjenih vprašalnikov. Kot najpogostejši razlog za posodobitev merilne opreme so sodelujoči navedli dotrajanost (44 %), sledi povečanje kapacitet (23 %). Naložba v novo merilno opremo, v zadnjih treh letih, je v 92 % upravičila pričakovanja laboratorijev. Prav tako je za skoraj enak delež raziskava potrdila, da so nove instalacije in izbira merilne opreme potekale po pričakovanjih laboratorijev. 83 % novih instalacij in posodobitev v laboratorijih je prispevalo k večji učinkovitosti, nova merilna oprema pa zagotavlja zanesljivejše rezultate merjenj. V 11 % uvedene spremembe, po mnenju uporabnikov, niso bile uspešne. V teh primerih tveganj za nepravilne rezultate niso zmanjšali. Razlogi za to so bili različni. Nekateri so navedli, da nova oprema zahteva znatno dodatno angažiranje osebja zaradi postavitve novih metod, zaradi odprave nepričakovanih zapletov pri instalaciji, zaradi večje zahtevnosti analizatorjev ali zaradi manjše zanesljivosti rezultatov. Upoštevajoč število merilnih sistemov, število oseb, ki obvladuje laboratorijsko opremo in zahtevnost, rezultati niso pokazali statistično značilnih razlik.
Organizacija: Dobljeni podatki so primerljivi z rezultati, ki jih je marca 2020 zbralo ameriško podjetje Lab Manager. Slovenski preskuševalni in kalibracijski laboratoriji se soočajo z enakimi izzivi, tveganji in hotenji, kot primerljivi tuji laboratoriji, to je pomembno sporočilo raziskave.
Družba: Raziskava potrjuje, da preskuševalni in kalibracijski laboratoriji uvajajo nenehne spremembe in jih uspešno obvladujejo. To krepi zaupanje v poročane rezultate. Ti vplivajo na kakovost in sprejemljivost različnih produktov in storitev v številnih panogah, podpirajo industrijske procese in so v funkciji monitoringa okolja.
Originalnost: Rezultati so neposredno uporabni in relevantni v slovenskem in mednarodnem prostoru. Gre za prvo tovrstno raziskavo v Sloveniji.
Omejitve/nadaljnje raziskovanje: Proučili smo zgolj določene in omejene vidike obvladovanja sprememb v preskuševalnih in kalibracijskih laboratorijih. Nadaljnje raziskave lahko usmerimo v bolj poglobljeno analizo laboratorijskih sprememb, s poudarkom na različnih ravneh obvladovanja: na osebni, skupinski in organizacijski. Prav tako bi lahko podrobneje analizirali odzivanje laboratorijev v primeru transakcijskih (postopnih, evolucijskih) in transformacijskih (enkratnih, radikalnih) sprememb.

Ključne besede: obvladovanje tveganj, obvladovanje sprememb, laboratorijska dejavnost

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Milan Simončič je diplomiral na Fakulteti za kemijo in kemijsko tehnologijo v Mariboru. Z disertacijo »Model vključevanja zunanjih deležnikov v izvajanje družbeno odgovornih načel jedrskih elektrarn«, ki jo je zagovarjal

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na Fakulteti za organizacijske študije v Novem mestu, je pridobil naziv doktorja znanosti s področja menedžmenta kakovosti. Na Fakulteti za organizacijske študije v Novem mestu je bil izvoljen v naziv docenta. Kot vodja kemije je zaposlen v Nuklearni elektrarni Krško. Objavil je več člankov, aktivno deluje v strokovnih domačih in mednarodnih organizacijah. Raziskovalno se ukvarja s proučevanjem koncepta družbene odgovornosti, izzivov organizacijske odličnosti, priložnosti energetike v trajnostni družbi, sistemov vodenja kakovosti in kemije vodnih medijev jedrskih elektrarn.

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Challenges of managing changes in laboratories

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Abstract

Research Question (RQ): Testing and calibration laboratories are constantly updating and upgrading their measuring equipment. What risks and challenges they face in these processes?
Purpose: We determined how testing and calibration laboratories in Slovenia manage changes in the upgrade and/or replacement of their measuring equipment. The research answers the questions we confront in technological changes of measuring equipment and overall quality management in the laboratory activity.
Method: As a tool for obtaining the necessary information, we used a questionnaire developed for this purpose. We invited representatives from 86 calibration and testing laboratories that perform accredited activity in Slovenia in accordance with SIST EN ISO/IEC 17025 and are accredited by the Slovenian Accreditation. In addition to descriptive and frequency statistics, we used some nonparametric statistical tests to evaluate the data.
Results: In January 2021, participants returned 56 fully completed questionnaires. As the most common reason for the modernization of measuring equipment, the participants stated wear and tear (44 %), followed by an increase in capacity (23 %). Investment in new measuring equipment, in the last three years, in 92 % met the expectations of laboratories. Also, for almost the same share, the research confirmed that the new installations and the selection of measuring equipment took place according to the expectations of the laboratories. 83 % of new installations and upgrades in laboratories have contributed to greater efficiency, and new measuring equipment provides more reliable measurement results. In 11 % of changes, according to users were not successful. In these cases, the risks of incorrect results are not reduced. The reasons for this were varied. Some stated that the new equipment requires significant additional staff engagement due to the deployment of new methods, due to the elimination of unexpected installation complications, due to the greater complexity of the analysers, or due to the lower reliability of the results. Considering the number of measuring systems, the number of persons managing the laboratory equipment and the complexity of analytical methods, the results did not show statistically significant differences.
Organization: The data obtained are comparable to the results collected in March 2020 by the American company Lab Manager. Slovenian testing and calibration laboratories meet the same challenges, risks and desires as comparable external laboratories, which is an important message of the research.
Society: The research confirms that testing and calibration laboratories introduce continuous changes and successfully manage them. This strengthens confidence in the reported results. These affect the quality and acceptability of various products and services in many industries, support industrial processes and are in the function of monitoring the environment.
Originality: The results are directly useful and relevant in Slovenia and internationally. This is the first research of its kind in Slovenia.
Limitations / further research: We examined only specific and limited aspects of change management in testing and calibration laboratories. Further research can be focused on a more in-depth analysis of laboratory changes, with an emphasis on different levels of management: personal, groups and organizational. Research could also include laboratory responses in the experience of transactional (steady, evolutionary) and transformational (one-off, radical) changes.

Keywords: risk management, change management, laboratory activity

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Milan Simončič graduated on the Faculty of Chemistry and Chemical Technology in Maribor. With the dissertation "Model of integrating external stakeholders in the implementation of the principles of social

responsibility of nuclear power plants", advocated at the Faculty of Organisation Studies in Novo Mesto, he achieved the title of doctor of science in the field of quality management. He was elected assistant professor at the Faculty of Organizational Studies in Novo mesto. As the head of chemistry department works at the Krško Nuclear Power Plant. He has published several papers, actively works in some professional organizations. His research interests include the concept of social responsibility, the challenges of organizational excellence, the opportunities of energy in a sustainable society, quality management systems and the water chemistry of nuclear power plants.

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