

Napoved vrednosti trga obstoječih in prihajajočih tehnoloških sprememb

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Povzetek

Raziskovalno vprašanje (RV): Kakšne so napovedi za vrednost trga novodobnih tehnologij?

Namen: Članek se osredotoča na predstavitev napovedi za trg povezan s tehnološkim razvojem.

Metoda: Za namene raziskave smo pregledali trende pri razvoju programske in strojne opreme (kibernetsko fizični sistemi, internet stvari, umetna inteligenca itd.). Pregledali smo tudi alternativne tehnologije, ki imajo potencial, da zamenjajo trenutno tehnologijo ali pa povečajo njeno učinkovitost (kvantno računanje, nevro-morfični harver itd.)

Rezultati: Pregled literature je pokazal, da se bo trg starih in novih tehnologij močno povečal, v nekaterih primerih eksponentno. Posamezne tehnologije bodo vplivale na razvoj preostalih tehnologij, kar bo imelo sinergijski efekt pri sočasni uporabi tehnologij, kot tudi za trg omenjenih tehnologij.

Organizacija: Če se kvantno računanje in nevro-morfična strojna oprema pokažeta kot neizvedljiva, bo to pomenilo, da je napredek v razvoju naših tehnologij omejen, vsaj do trenutka, ko se bodo odkrile nove tehnologije. Nove tehnologije, s sinergijskim efektom, bodo lahko omejitev trenutnih tehnologij zmanjšale čez čas.

Družba: Po drugi strani pa je neizvedljivost kvantnega računanja in nevro-morfične strojne opreme slaba za Industrijo 4.0, saj je trenutna vrednost Industrije 4.0 71.7\$ milijard dolarjev in se pričakuje, da se bo ta vrednost povečala na 156.6\$ milijard dolarjev do leta 2024.

Originalnost: Na to temo še ni bilo posodobljenega pregleda trenutnega stanja trga za vse obstoječe in prihajajoče tehnologije.

Omejitve/nadaljnje raziskovanje: Omejitev, ki se pojavi pri raziskavi je ta, da se okolje stalno spreminja in lahko da bodo v naslednjih letih naše napovedi zastarele ali pa posodobljene, kot tudi to, da je tema zelo kompleksna in je iz tega razloga težko napovedati prihodnost.

Ključne besede: tehnologije Industrije 4.0, kvantno računanje, nevro-morfična strojna oprema, Moorjev zakon

Dr. Tine Bertoncel je doktor znanosti na področju managementa. Dela kot raziskovalec na Fakulteti za organizacijske študije v Novem mestu, kjer raziskuje področja Industrije 4.0, menedžmenta, sistemov zgodnjega obveščanja in rudarjenja besedil. Je avtor in soavtor večih znanstvenih in strokovnih člankov.).

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managementa, psihologije v managementu, zdravja na delovnem mestu ter vodenja. Sodelovala je in še sodeluje tudi pri različnih projektih. Je avtorica in soavtorica številnih znanstvenih in strokovnih člankov.

Prediction of market value for current and future technological developments

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Abstract

Research Question (RQ): What are the predicted market trends in current and upcoming technological developments?

Purpose: This article tries to find out how the market will grow in regards to advanced technologies have already been developed for some time and those that are in their early phases of development.

Method: For the purpose of the study trends in market research were looked. We studied the current hardware and software market prices and the current market value of several different technologies (Cyber-physical systems, Traditional hardware and software, Artificial Intelligence etc.). Finally, we looked at the market trends of alternative technologies (Quantum computing, neuromorphic hardware etc.)

Results: We found that the market for all of the major technological developments, now and in the future, is expected to increasingly grow, in some cases at exponential rates. Overall, it seems that each individual technology will contribute to the growth of other specified technologies, as they can be used to increase the efficiency of other technologies, as well as to have a synergistic effect, which in turn contributes to the technology's market value.

Organization: If quantum computing or neuromorphic hardware do not end up being viable additions to or alternatives to current technology, Industry 4.0 reaches a dead end, which means that there is a limit to how advanced software and hardware in smart manufacturing can become. However, the limit due to the synergistic effects of various technologies, is likely still a long way ahead of us.

Society: For those that are afraid of technological development, smart manufacturing technologies reaching their limit might be seen as a positive outcome, however for an industry that is currently valued at approximately 71.7\$ billion dollars and is expected to grow to 156.6\$ billion dollars by 2024, this is not a great thing to hear. However, it seems that new technologies are emerging at just the right time for Industrial managers to not worry.

Originality: To the best of our knowledge, this kind of literature review has not yet been conducted on up-to-date market value of technologies.

Limitations / further research: The limitation that arises is that the environment in which technology arises is constantly changing, within a few years these predictions might be outdated or updated, as well as the topic, is very complex and hard to predict.

Keywords: Industry 4.0 technology, Quantum computing, Neuromorphic hardware, Moore's law

Tine Bertonceľ received his PhD in management. He is a research assistant at the Faculty of organization studies, where he is doing research on Industry 4.0, management, early management systems and text mining. He authored or co-authored various scientific papers published in professional and academic journals.

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