



**ProsperAMnet**

# Strategic Action Plan to D.T.3.4.4

also DT 334, DT341, DT345

Country: Slovenia

Partner: PP4, Chamber of Commerce and Industry of Slovenia

Date: 4. 1. 2022

## Vsebina / Content

Trenutno stanje / Current State .....	3
Uvod / Introduction.....	3
Podjetja / Companies (DT341).....	4
Izobraževanje / Education.....	5
Oblikovalci politik / Policy Makers (DT345, DT341) .....	6
Vizija 2030 / Vision 2030 .....	7
Podjetja / Companies.....	7
Infrastruktura / Infrastructure.....	8
Ukrepi za doseganje te vizije / Actions to achive the VISION.....	9
Podjetja / Companies (DT334).....	9
Izobraževanje / Education.....	10
Oblikovalci politik / Policy Makers.....	11
Posredniki / Intermediates.....	12
Viri / Sources.....	13

## Trenutno stanje / Current State

### Uvod / Introduction

Znanja o umetni inteligenci imamo v Sloveniji veliko. Glede na raziskave so slovenska podjetja po uporabi UI nad povprečjem Evropske unije, na področju izobraževanja pa ima Slovenija dolgoletno tradicijo študija UI na visokošolskih zavodih. Rezerve obstajajo pri prenosu tega znanja in izkušenj v prakso. Trenutno v Sloveniji to tematiko podrobneje naslavljajo trije dokumenti: Nacionalni program spodbujanja razvoja in uporabe umetne inteligence v Republiki Sloveniji do leta 2025 (NpUI), Strategija razvoja Slovenije 2030 in Slovenska strategija pametne specializacije S4. Aktualni položaj na področju umetne inteligence v Sloveniji bo predstavljen na naslednjih treh straneh.

In Slovenia, there is a lot of knowledge about artificial intelligence. According to the surveys about the use of AI, Slovenian companies are above the European Union average, and in the field of education, Slovenia has a long tradition of studying AI at higher education institutions. Reservations exist in putting this knowledge and experience into practice. Currently, there are three relevant documents that address this issue: National programme promoting the development and use of AI in the Republic of Slovenia by 2025 (NpUI), Slovenian Development Strategy 2030, and Slovenia's Smart Specialisation Strategy – S4. The current situation in the field of AI will be presented on the next three pages.

## Podjetja / Companies (DT341)

<p>Slovenska podjetja so po uporabi UI nad povprečjem Evropske unije. Raziskava, ki jo je za Evropsko komisijo v 9.640 evropskih podjetij izvedla raziskovalna družba Ipsos, je pokazala, da vsaj eno tehnologijo umetne v Sloveniji uporablja 60 odstotkov velikih podjetij, 53 odstotkov srednjih podjetij, 49 odstotkov malih podjetij in 42 odstotkov mikro podjetij, medtem ko so v EU27 ti deleži 55, 49, 39 in 38 odstotkov. Podjetja, ki se z UI ukvarjajo, so z UI povezana na različne načine. Nekatera podjetja ponujajo UI kot dopolnitev širše palete storitev, večinoma povezane s sistemi poslovne inteligence, postavitve podatkovnih skladišč, itd., druga pa so produktom ali storitvijo specializirana na določeno specifično področje uporabe, npr. zdravje, procesiranje slik in videa, avtomatizacijo poslovnih procesov, industrijo &amp; robotiko. Pomemben delež predstavljajo tudi podjetja, ki ne ponujajo neposredno produkta ali storitve, ki bi temeljil na uporabi UI, vendar pa imajo interno ekipo podatkovnih znanstvenikov, ki s svojim delom podpirajo operacije podjetja. Med njimi so večja podjetja s področja bančništva, trgovine, proizvodnje in tudi tehnološka podjetja. Ocenjuje se, da v Sloveniji v gospodarstvu deluje med 300 in 500 podatkovnih znanstvenikov, kljub tej številki pa se podjetja soočajo s pomanjkanjem ustrezno izobraženega kadra.</p>	<p>Slovenian companies are above the European Union average when it comes to use of AI. A survey conducted for the European Commission in 9,640 European companies by the research company Ipsos showed that at least one artificial technology in Slovenia is used by 60 percent of large companies, 53 percent of medium-sized companies, 49 percent of small companies and 42 percent of micro companies. In the EU27, these shares are 55, 49, 39 and 38 percent. AI companies are connected to AI in different ways. Some companies offer AI as a complement to a wider range of services, mostly related to business intelligence systems, data warehouse layouts, etc., while others specialize in a product or service specific to a specific area of application, e. g. health, image and video processing, business process automation, industry &amp; robotics. An important share is also represented by companies that do not directly offer a product or service based on the use of AI but have an internal team of data scientists who support the company's operations with their work. Among them are larger companies in the field of banking, trade, manufacturing and also technology companies. It is estimated that between 300 and 500 data scientists work in Slovenia, but despite this number, companies are facing a shortage of properly trained staff.</p>
--	--

## Izobraževanje / Education

<p>Na področju izobraževanja ima Slovenija dolgoletno tradicijo študija UI na visokošolskih zavodih. UI je že več kot 30 let zastopana v študijskih izobraževalnih programih s področja IKT visokošolskih zavodov. UI danes velja za eno glavnih področij študija na več fakultetah Univerze v Ljubljani, prav tako pa vsebine UI ponujajo tudi druge univerze in raziskovalne institucije (npr. Institut Jožef Stefan). Na splošno so visokošolski izobraževalni programi, povezani z UI, dobro zastopani, vendar bi morale biti teme, povezane z UI, vključene v srednješolske, pa tudi osnovnošolske programe. Tu pa Slovenija zaostaja, saj na osnovnošolski in srednješolski ravni predmet s tega področja ne obstaja.</p> <p>Slovenija ima danes okoli 250 raziskovalcev s področja UI, pri čemer moramo ob tem upoštevati majhnost razpoložljive populacije v Sloveniji. Na leto s področja računalništva in matematike diplomira okoli 200 študentov, a le del se jih v svoji poklicni poti ukvarja z UI. Ostaja dejstvo, da Slovenija ne uspe proizvesti zadosti kadra z ožjega področja UI, ki bi zadostil venomer naraščajoče potrebe na področju raziskovanja, izobraževanja in industrije. Kljub relativno dobremu in uspešnemu raziskovalnemu in izobraževalnemu okolju na področju UI pa se Slovenija vse bolj sooča tudi z begom možganov mlajše visoko izobražene populacije, saj lahko slovenski raziskovalci s svojim znanjem in izkušnjami dobijo boljše priložnosti na tujih univerzah ali v gospodarstvu. Mladih raziskovalcev in podoktorskih sodelavcev na področju UI zato kritično primanjkuje. Rast tehnološko naprednih podjetij v Sloveniji bo ta razkorak le še povečal.</p>	<p>In the field of education, Slovenia has a long tradition of studying AI at higher education institutions. AI has been represented in ICT study programs in higher education institutions for more than 30 years. Today, AI is considered to be one of the main fields of study at several faculties of the University of Ljubljana, and the contents of AI are also offered by other universities and research institutions (e. g. the Jožef Stefan Institute). In general, AI-related higher education programs are well represented, but AI-related topics should be included in secondary and primary education programs. Here, however, Slovenia lags behind, as there is no subject in this field at the primary and secondary school level.</p> <p>Today, Slovenia has around 250 researchers in the field of AI, and we must take into account the small size of the available population in Slovenia. About 200 students graduate in computer science and mathematics each year, but only a part of them is involved in AI in their careers. The fact remains that Slovenia fails to produce enough staff from the core field of AI to meet the ever-growing needs in the field of research, education and industry. Despite the relatively good and successful research and educational environment in the field of AI, Slovenia is increasingly facing the brain drain of the younger highly educated population, as Slovenian researchers with their knowledge and experience can get better opportunities at foreign universities or the economy. There is therefore a critical shortage of young researchers and postdoctoral fellows in the field of AI. The growth of technologically advanced companies in Slovenia will only increase this gap.</p>
--	---

## Oblikovalci politik / Policy Makers (DT345, DT341)

<p>Ustrezno okolje za razvoj, uvajanje in uporabo UI vključuje zakonodajo ter predpise, ki zagotavljajo, da se rešitve temelječe na UI razvijajo in uporabljajo na za družbo sprejemljiv način. Slovenija si prizadeva za visoko kakovostno, pregledno in etično UI, v katero bodo državljani zaupali. Pravni in etični okvir se vzpostavlja v sodelovanju z evropskimi partnerji na podlagi obstoječih evropskih smernic, ki urejajo etični in pravni vidik pri razvoju in uporabi UI. V skladu s temi načeli je Vlada RS sprejela Nacionalni program spodbujanja razvoja in uporabe umetne inteligence v Republiki Sloveniji do leta 2025 (maja 2021) in Strategijo razvoja Slovenije 2030 (decembra 2017), ki prepoznavata izzive četrte industrijske revolucije, ki jo zaznamujeta digitalno gospodarstvo ter razvoj robotike in UI, ter vzpostavljata nove modele poslovanja, dela in delovnih mest, kar zahteva razvoj novih znanj in veščin ter prilagoditve na številnih področjih gospodarskega, družbenega in okoljskega razvoja. Področja UI se dotikata tudi Strategija razvoja informacijske družbe do leta 2020 – Digitalna Slovenija 2020 ter Strategija pametne specializacije, ki je vzpostavila Strateška razvojno-inovacijska partnerstva – SRIP. Poleg vladnih organov imajo tako pomemben vpliv pri oblikovanju politik tudi SRIP-i (strateška razvojno-inovacijska partnerstva, ki na ciljnih področjih Strategije pametne specializacije (S4) združujejo predstavnike gospodarstva (npr. Gospodarsko zbornico Slovenije, različna podjetja itd.), institucij znanja (npr. Inštitut Jožef Stefan, različne univerze itd.) in države (preko različnih javnih zavodov).</p>	<p>An appropriate environment for the development, implementation and use of AI includes legislation and regulations that ensure that AI-based solutions are developed and applied in a way that is acceptable to society. Slovenia strives for a high-quality, transparent and ethical AI that citizens will trust. The legal and ethical framework is being established in cooperation with European partners on the basis of existing European guidelines governing the ethical and legal aspects of the development and use of AI. In accordance with these principles, the Government of the Republic of Slovenia adopted the National programme promoting the development and use of AI in the Republic of Slovenia by 2025 (in May 2021) and Development Strategy of Slovenia 2030 (in December 2017), which recognize the challenges of the fourth industrial revolution, marked by the digital economy and the development of robotics and AI, and establish new business skills and adjustments in many areas of economic, social and environmental development. The areas of AI are also touched upon by the Development strategy for the information society until 2020 – Digital Slovenia 2020 and the Smart Specialization Strategy, which established the Strategic Research and Innovation Partnerships - SRIPs. In addition to government bodies, SRIPs also have an important influence in policymaking in the target areas of the Smart Specialization Strategy (S4). They bring together representatives of the economy (e.g., the Chamber of Commerce of Slovenia, various companies, etc.), knowledge institutions (e.g., the Jožef Stefan Institute, various universities, etc.) and public institutions.</p>
---	--

## Vizija 2030 / Vision 2030

### Podjetja / Companies

<p>Slovenija želi do leta 2030 vzpostaviti sistem za koherentno podporo raziskavam, inovacijam, uvajanju in uporabi tehnologij UI, pospešiti procese digitalizacije ter uvesti UI na vsa področja in v vse panoge slovenskega gospodarstva ter zagotoviti učinkovitejši pretok rezultatov dela raziskovalnih institucij v gospodarstvo. Na ta način si bo Slovenija utrdila položaj med najrazvitejšimi državami na področju UI. Ker je v Sloveniji sedež Mednarodnega raziskovalnega centra za umetno inteligenco (IRCAI), ki je bil ustanovljen pod okriljem Organizacije Združenih narodov za izobraževanje znanost in kulturo (UNESCO) ter je prvi in edini center, ki se neposredno osredotoča na umetno inteligenco na globalnem področju, si Slovenija želi postati kot ena vodilnih držav na področju UI, s tem pa zadržati doma vzgojene strokovnjake in privabiti tuje.</p> <p>Do leta 2030 si želi Slovenija vzpostaviti konkurenčen in družbeno odgovoren podjetniški sektor, ki je ključen za gospodarski razvoj države. S celovito podporo slovenskim raziskovalno inovacijskim deležnikom pri razvoju na UI temelječih tehnologij in rešitev, z uvajanjem in vzpostavitvijo referenčnih rešitev, temelječih na UI, v sodelovanju z vsemi družbenimi skupinami v Sloveniji ter s podporo uveljavitvi slovenskih deležnikov na področju UI tudi v mednarodnem okolju bo Slovenija pospešila gospodarsko rast, hkrati pa povečala tudi število hitro rastočih podjetij z velikim potencialom zagotavljanja novih in kakovostnih delovnih mest. Poleg tega bo do leta 2030 vzpostavila spodbudno in predvidljivo okolje za poslovanje in investicije, ustrezno infrastrukturo kakovosti, sodobno informacijsko in komunikacijsko infrastrukturo, zagotovljeni bodo ustrezni človeški viri.</p>	<p>By 2030, Slovenia wants to establish a system for coherent support for research, innovation, introduction and use of AI technologies, accelerate digitization processes and introduce AI in all areas and in all sectors of the Slovenian economy and ensure more efficient flow of research results into the economy. In this way, Slovenia will consolidate its position among the most developed countries in the field of AI. As Slovenia is the seat of the International Research Center on Artificial Intelligence (IRCAI), which was established under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and which is the first and only center to focus directly on artificial intelligence in the global field, Slovenia wants to become one of the leading countries in the field of AI, thus retaining Slovenian professionals and attracting foreigners.</p> <p>By 2030, Slovenia wants to establish a competitive and socially responsible business sector, which is crucial for the country's economic development. With comprehensive support to Slovenian research and innovation stakeholders in the development of AI-based technologies and solutions, by introducing and establishing reference solutions based on AI (in cooperation with all social groups in Slovenia) and by supporting the implementation of Slovenian stakeholders in AI in the international environment, Slovenia will accelerate economic growth while increasing the number of fast-growing companies with great potential for new and quality jobs. In addition, by 2030, it will establish a stimulating and predictable environment for business and investment, adequate quality infrastructure, modern information and communication infrastructure, and adequate human resources will be provided.</p>
---	--

## Infrastruktura / Infrastructure

<p>Razvoj in uporaba UI bo v prihodnje zahtevala ustrezno infrastrukturo, ki jo predstavljajo različni podatki (strukturirani in nestrukturirani), računalniški sistemi (z ustrezno procesorsko močjo), mobilna in fizična širokopasovna infrastruktura (za vse bolj povezljive in globalne storitve) ter različne pametne naprave in senzorji (t. j. IoT). Z vidika UI je velik potencial v povezovanju podatkov iz različnih virov javnega in zasebnega sektorja na področjih jezikovnih virov, opazovanja okolja, zdravja, prostorskega načrtovanja, prometa, itd. ter njihovega povezovanja s podatki industrijskega sektorja, finančnega sektorja, turizma, itd., ob jasnem zavedanju, da široko povezovanje različnih virov neosebni podatkov lahko z vidika UI vseeno pripelje tudi do problemov povezanih z varovanjem temeljnih pravic posameznika. Ker vključuje UI raznovrstne računsko intenzivne algoritme, je za njen razvoj, uvajanje in uporabo v digitalnem ekosistemu potrebna uporaba računalniških sistemov z ustrezno procesorsko močjo. Dostop do nacionalne superračunalniške infrastrukture bo temeljil na principu odprte znanosti – odprta raziskovalna infrastruktura ter bo za vse raziskovalce, ki delujejo v Sloveniji brezplačen. Slednje zahteva ustrezno širokopasovno infrastrukturo, tako fiksno kot tudi mobilno, ki zagotavlja ustrezno robustnost, hitrost in kapaciteto potrebno za potrebe različnih distribuiranih UI algoritmov in sistemov. Poleg tega se bo Slovenija zavzemala za oblikovanje enotnih platform za integracijo in dostop do tovrstnih podatkov za potrebe razvoja in testiranja UI rešitev na različnih področjih (podatkovni prostori), kjer bo izkazan interes uvajanja referenčnih rešitev (npr. pametna mesta in skupnosti, industrija 4.0, javna uprava, zdravje in medicina, okolje in prostor, mobilnost, energetika, kmetijstvo).</p>	<p>The development and use of AI will in future require an appropriate infrastructure represented by different data (structured and unstructured), computer systems (with adequate processing power), mobile and physical broadband infrastructure (for increasingly connectable and global services), and various smart devices and sensors (i.e., IoT). From the AI's point of view, there is great potential in linking data from different public and private sector sources in the areas of language resources, environmental observation, health, spatial planning, transport, etc. and their integration with data from industry, the financial sector, tourism, etc., with a clear awareness that the broad integration of different sources of non-personal data can nevertheless lead to problems related to the protection of individual fundamental rights. Because AI includes a variety of computationally intensive algorithms, its development, deployment, and use in the digital ecosystem requires the use of computer systems with adequate processing power. Access to the national supercomputer infrastructure will be based on the principle of open science - open research infrastructure and will be free of charge for all researchers working in Slovenia. The latter requires an appropriate broadband infrastructure, both fixed and mobile, which provides the appropriate robustness, speed and capacity needed for the needs of various distributed AI algorithms and systems. In addition, Slovenia will strive to create unified platforms for the integration and access to such data for the development and testing of AI solutions in various fields (data spaces), where interest will be shown in introducing reference solutions (e. g. smart cities and communities, industry 4.0, public administration, health and medicine, environment and space, mobility, energy, agriculture).</p>
---	---



## Ukrepi za doseganje te vizije / Actions to achieve the VISION

### Podjetja / Companies (DT334)

<p>Ukrepi za doseganje teh vizij za umetno inteligenco v podjetjih so:</p> <ul style="list-style-type: none"> <li>• Spodbujati tako razvoj znanosti in raziskav na prednostnih področjih kot prenos raziskovalnih dosežkov za visoko konkurenčno gospodarstvo.</li> <li>• Prizadevanje za dobro sodelovanje z institucijami znanja in drugimi podjetji.</li> <li>• Spodbujanje internacionalizacije podjetij z neposrednimi tujimi investicijami in vključevanjem v globalne verige vrednosti ter z vključitvijo raziskovalnih organizacij v mednarodno okolje.</li> <li>• Zagotavljanje spodbudno in predvidljivo podporno okolje, sisteme standardizacije, akreditacije in meroslovja.</li> <li>• Analiza tržnih priložnosti in trendov na področju UI.</li> <li>• Razvoj okolja za ustvarjanje trendov na področju UI.</li> <li>• Identifikacija virov financiranja, ki spodbujajo razvoj in implementacijo UI.</li> <li>• Učinkovito upravljanje podjetij v državni lasti.</li> <li>• Ustvarjati kakovostna delovna mesta, ki ustvarjajo višjo dodano vrednost.</li> <li>• Podpora programom usposabljanja zaposlenih (tečajji, seminarji) za pridobitev novih znanj, veščin in poklicnih kvalifikacij s področja UI (ang. re-skilling).</li> </ul>	<p>Actions to achieve these visions for artificial intelligence within the companies are:</p> <ul style="list-style-type: none"> <li>• Promoting both the development of science and research in priority areas and transfer research achievements for a highly competitive economy.</li> <li>• Striving for good cooperation with knowledge institutions and other companies.</li> <li>• Promoting the internationalization of companies with foreign direct investment and integration into global value chains and the involvement of research organizations in international environment.</li> <li>• Providing a stimulating and predictable supportive environment, systems standardization, accreditation, and metrology.</li> <li>• Analysis of market opportunities and trends in the field of AI.</li> <li>• Development of an environment for creating trends in the field of AI.</li> <li>• Identification of funding sources that promote the development and implementation of IM.</li> <li>• Effective management of state-owned enterprises.</li> <li>• Creating quality jobs that create higher added value.</li> <li>• Support for employee training programs (courses, seminars) for the acquisition of new knowledge, skills and professional qualifications in the field of AI (re-skilling).</li> </ul>
---	--

## Izobraževanje / Education

<p>Ukrepi za uresničitev te vizije v izobraževanju so:</p> <ul style="list-style-type: none"> <li>• Sistematičen pregled in analiza predmetnikov študijskih programov za strokovno izobraževanje na področju UI na terciarni ravni ter njihova dopolnitev glede na zadnja dognanja na področju UI v svetu.</li> <li>• Sistematičen pregled in posodobitev izobraževalnih programov na osnovnošolski in srednješolski ravni z vidika vključenosti temeljnih vsebin računalništva in informatike in vsebin, ki jih zahteva razvoj in uvajanje UI (npr. ang. computational thinking).</li> <li>• Analiza potreb in možnosti oblikovanja interdisciplinarnih študijskih programov na terciarni ravni, ki povezujejo UI in podatkovno znanost na eni strani ter humanistiko in pravo na drugi strani.</li> <li>• Podpora obštudijskim dejavnostim (npr. poletne šole, tečaji, delavnice in nadgraditev teh dejavnosti z regijskimi, državnimi tekmovanji) za osnovnošolce, srednješolce in študente, za seznanitev s temami, ki so potrebne za razumevanje, razvoj, uvajanje in uporabo UI.</li> <li>• Priprava platforme in izobraževalnih vsebin o UI za izobraževanje na daljavo na vseh ravneh formalnega izobraževanja in vseživljenjskega učenja.</li> <li>• Podpora programom za pridobivanje digitalnih kompetenc in uporabniških znanj s področja UI (splošno vseživljenjsko učenje, računalniško opismenjevanje odraslih) za ranljive skupine in osebe s posebnimi potrebami.</li> <li>• Priprava izobraževalnih vsebin in primerov uporabe UI pri različnih predmetih in drugih dejavnostih v osnovnih in srednjih šolah (npr. slovenščina, zgodovina, kemija, biologija, umetnost), s poudarkom na praktični demonstraciji uporabnosti UI pri poučevanju vsebin danih predmetov.</li> </ul>	<p>Actions to achieve this vision in the field of education are:</p> <ul style="list-style-type: none"> <li>• Systematic review and analysis of the curricula of study programs for professional education in the field of AI at the tertiary level and their supplementation in the light of the latest findings in the field of AI in the world.</li> <li>• Systematic review and modernization of educational programs at primary and secondary school level in terms of the inclusion of basic computer science and informatics content and content required for the development and implementation of AI (e. g. computational thinking).</li> <li>• Analysis of the needs and possibilities of designing interdisciplinary study programs at the tertiary level, which link AI and data science on the one hand and the humanities and law on the other.</li> <li>• Support for extracurricular activities (e. g. summer schools, courses, workshops and upgrading these activities with regional, national competitions) for primary and secondary school students and students, to get acquainted with topics needed to understand, develop, implement and use AI.</li> <li>• • Preparation of a platform and educational content on AI for distance education at all levels of formal education and lifelong learning.</li> <li>• Support for programs for acquiring digital competencies and user skills in the field of AI (general lifelong learning, computer literacy of adults) for vulnerable groups and people with special needs.</li> <li>• Preparation of educational content and examples of the use of AI in various subjects and other activities in primary and secondary schools (e. g. Slovene, history, chemistry, biology, art), with an emphasis on the practical demonstration of the usefulness of AI in teaching the content of given subjects.</li> </ul>
--	---

## Oblikovalci politik / Policy Makers

<p>Ukrepi, ki bi jih za uresničitev te vizije morali sprejeti oblikovalci politik:</p> <ul style="list-style-type: none"> <li>• Z nacionalnimi projekti in razpisi spodbujati sodelovanja med institucijami znanja in podjetji, ki se ukvarjajo z razvojem in implementacijo UI.</li> <li>• Z nacionalnimi projekti in razpisi spodbujati sodelovanja med podjetji, ki se ukvarjajo z UI.</li> <li>• Z nacionalnimi projekti in razpisi spodbujati sodelovanja med institucijami znanja, ki se ukvarjajo z razvojem in implementacijo UI.</li> <li>• Prizadevanje k stimulativnemu davčnemu okolju, ki bi privabil tuj kapital.</li> <li>• Podpreti vključevanju slovenskih partnerjev v mednarodne mreže, spodbujanje raziskav in privabljanje tujih vrhunskih strokovnjakov s področja UI v Slovenijo, predvsem preko shem, ki so komplementarne visokokonkurenčnim mednarodnim razpisom.</li> <li>• Vključiti več vsebin UI v javno šolstvo (na način kot je predstavljen v zgornji točki).</li> <li>• S spremembami zakonodaje si prizadevati visoko kakovostno, pregledno in etično UI, v katero bodo državljani zaupali.</li> <li>• Nacionalni nadzorni mehanizem za spremljanje in preverjanje skladnosti rešitev, ki temeljijo na UI, z zakonodajo v skladu z EU okvirjem zagotavljanja zaupanja vredne UI.</li> <li>• Implementirati Nacionalni program spodbujanja razvoja in uporabe umetne inteligence v Republiki Sloveniji do leta 2025.</li> <li>• V oblikovanje politik implementirati Nacionalni program spodbujanja razvoja in uporabe umetne inteligence v Republiki Sloveniji do leta 2025, Strategijo razvoja Slovenije 2030 in Slovensko strategijo pametne specializacije S4.</li> </ul>	<p>Actions policy makers should take to achieve this vision:</p> <ul style="list-style-type: none"> <li>• Encourage cooperation between knowledge institutions and companies involved in the development and implementation of AI through national projects and tenders.</li> <li>• Encourage cooperation between AI companies through national projects and tenders.</li> <li>• Encourage cooperation between knowledge institutions involved in the development and implementation of AM through national projects and tenders.</li> <li>• Striving for a stimulating tax environment that would attract foreign capital.</li> <li>• Support the integration of Slovenian partners into international networks, promote research and attract foreign top AI experts to Slovenia, especially through schemes that are complementary to highly competitive international tenders.</li> <li>• Incorporate more AI content into public education (as presented above).</li> <li>• Achieve high-quality, transparent and ethical AI that citizens will trust through changes in legislation.</li> <li>• Establish a national control mechanism for monitoring and verification compliance of AI-based solutions with legislation in line with the EU assurance framework trusted AI.</li> <li>• Implement the National Program for the Promotion of the Development and Use of Artificial Intelligence in the Republic of Slovenia until 2025.</li> <li>• Implement the National Program for the Promotion of the Development and Use of Artificial Intelligence in the Republic of Slovenia until 2025, the Development Strategy of Slovenia 2030 and the Slovenian Smart Specialization Strategy S4 in policy-making.</li> </ul>
---	---

## Posredniki / Intermediates

<p>Ukrepi, ki bi jih za uresničitev te vizije morali sprejeti posredniki:</p> <ul style="list-style-type: none"> <li>• Vzpostaviti osrednje koordinacije nacionalnih razvojnih deležnikov za UI v okviru Slovenske digitalne koalicije s sodelovanjem deležnikov raziskovalnega in visokošolskega sektorja, gospodarstva, nevladnih organizacij in civilne družbe.</li> <li>• Vzpostaviti podporno okolje za uvajanje UI v okviru vsaj enega Digitalnega inovacijskega stičišča na območju države, za pomoč, izobraževanje in svetovanje pri razvoju in uvajanju UI v gospodarstvu in javnem sektorju v skladu z usmeritvami in aktivnostmi na ravni EU in njenih podpornih mehanizmov za področje DIH.</li> <li>• Uvedba koordinacije za uvajanje UI v posameznih prioritetnih področjih, ki predvidevajo sodelovanje gospodarstva, raziskovalne sfere, države in/ali nevladnega sektorja.</li> <li>• Vzpostaviti medresorske koordinacije načrtovanja in izvajanja ukrepov in aktivnosti tega programa z aktivnostmi na področju odprte znanosti, HPC , velepodatkov, IoT in veriženja blokov ter morebitnih drugih novih prioritetnih omogočitvenih tehnologij.</li> <li>• Oblikovati koordinacije nacionalnih deležnikov za sodelovanje pri standardizacijskih aktivnostih na področju UI.</li> <li>• Prenašanje know-howa.</li> <li>• Oblikovanje predlogov za spremembe politik.</li> <li>• Zbiranje in predstavljanje dobrih praks na kariernih sejnih, na fakultetah, šolah itd.</li> <li>• Identificiranje virov financiranja za podjetja (evropske in nacionalne sheme).</li> </ul>	<p>Measures that intermediaries should take to achieve this vision:</p> <ul style="list-style-type: none"> <li>• Establish central coordination of national development stakeholders for AI within Slovenian digital coalitions with the participation of research and higher education stakeholders sector, the economy, NGOs and civil society.</li> <li>• Establishment of a supportive environment for the introduction of UI within at least one Digital innovation hub in the country, to help, educate and advise on development and implementation of AI in the economy and the public sector in accordance with the guidelines and activities at EU level and its Digital innovation hub Slovenia support mechanisms.</li> <li>• Introduction of coordination for the introduction of AI in individual priority areas that provide participation of the economy, the research sphere, the state and / or the non-governmental sector.</li> <li>• Establishment of inter-ministerial coordination of planning and implementation of measures and activities program with activities in the field of open science, HPC, big data, IoT and chaining blocks and possible other new priority enabling technologies.</li> <li>• Establishing coordination of national stakeholders for participation in standardization activities in the field of AI.</li> <li>• Making proposals for policy changes.</li> <li>• Transfer of know-how.</li> <li>• Collecting and presenting good practices at career fairs, faculties, schools, etc.</li> <li>• Identification of sources of funding for companies (European and national schemes).</li> </ul>
---	--

## Viri /Sources

[Nacionalni program spodbujanja razvoja in uporabe umetne inteligence v Republiki Sloveniji do leta 2025 \(NpUI\) / National programme promoting the development and use of AI in the Republic of Slovenia by 2025 \(NpUI\)](#)

[Strategija razvoja Slovenije 2030 / Slovenian Development Strategy 2030](#)

[Slovenska strategija pametne specializacije S4 / Slovenia's Smart Specialisation Strategy](#)

[Digitalna Slovenija 2020 – Strategija razvoja informacijske družbe do leta 2020 / Digital Slovenia 2020 – Development strategy for the information society until 2020](#)

[European enterprise survey on the use of technologies based on artificial intelligence](#)