



**Tō Aotearoa arawātea ki te
Atamai Hangahanga (AI)
Waihanga**

Nā te mahi tahi a Microsoft me Accenture tēnei pūrongo.

Mā ngā pūtake whakamōhiohio whānui anake tēnei pūrongo. Nā te mahi tahi a Microsoft me Accenture tēnei pūrongo. Kua whakaritea e Accenture tēnei pūrongo me ngā tātaritanga i roto.

Ko te pūtake o ngā tirohanga me ngā whakaaro kei roto i te pūrongo nei ko tō Accenture mōhiotanga me tōna māramatanga ki āna anō mahi pakihī, ki ngā mākete me te hangarau. Kāore a Accenture e whakarato tohutohu hauora, ture, waeture, tātari, tāke rānei, ā, ehara i te mea he tohutohu kei roto, ahakoa te momo. Ahakoa kua tuhia ngā mōhiohio i tēnei tuhinga i runga i te ngākau pai, ka āta karo a Accenture, ki te tino whānuitanga e whakaaetia ana ki raro i te ture, i te taunahatanga, ahakoa he aha, mō te tōtika me te whakaotinga katoatanga o ngā mōhiohio i roto i tēnei tuhinga, mō ngā mahi, ngā kore mahi rānei i mahia i runga anō i aua mōhiohio. Ka hurihia pea ngā whakaaro e kōrerohia nei i roto me te kore whakamōhio.

E kore e whakaaetia kia whakaputaina anō tētahi wāhangā o tēnei tuhinga ki te kore he whakaaetanga ā-tuhī i Accenture. Ka kitea pea i tēnei tuhinga he tohutoro ki ētahi ingoa kiritoru, ki ētahi mokopakihi, ki ētahi manatārua rānei nā hunga kē. Ko ngā ingoa kiritoru, ngā mokopakihi, ngā manatārua i roto i te tuhinga nei nā ō rātou anō kaipupuri.

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Whakarāpopotonga Matua (1/2)

Ko te wā o te AI Waihanga he arawātea ā-ōhangā hira nei ki a Aotearoa.

Mā te whakawhānui i ngā kokenga hou nei i ngā tikanga ako ā-mihini, he kaha ō ngā tauira AI Waihanga ki te tāpiri piriona mahā ki te tapeke wāriū hokonga (GDP) o Aotearoa. Ka taea e ēnei tauira te whakaumu ngā āhua e mahi ai ngā pakihī o Aotearoa, ngā āhua e ako ai, e torotoro ai, e tātai ai ngā tāngata o Aotearoa i ngā mōhiōhio, me te wete i ngā arawātea whakatupu me te whakawhanake i te ūhanga mā ngā ara i kore ai i taea i mua. Kei te whakarāpopoto tēnei pūrongo i ngā arawātea AI Waihanga mā Aotearoa, me ngā kipakipa matua mō te whakatutuki.

Ka āwhina te AI Waihanga ki te whakahōu i te kokenga ohaoha i Aotearoa me te anganui atu ki ngā werō ūhanga ā-hanganga tauroa.

He uua nei ngā āhuatanga ūhanga i tēnei wā tonu kei Aotearoa. Kei te hōtoea te whanaketanga ūhanga o te 0.6%, ā, he tōraro te whanaketanga whakaputaranga i te -0.4%.¹ Ka taea tērā e te AI Waihanga te whakatutuki i aua werō mā te uruhi pāpātanga nui ake o te GDP me te whakanui i te whanaketanga whakaputaranga. Ka taea tērā mā te wete wā anō ki ngā kaimahi hei aro ki ngā tūmahi uara nui, mā te whakaunoa mahi matatau, mā te whakakaha pūmanawa me ngā pūkenga, mā te tuku i ngā kaimahi kia nui ake ngā whakaputaranga mō te wā ūrite ki tō nāianei wā.

Nā matou i mātai neke atu i te 19,000 tūmahi i mahi puta noa i ngā tūranga mahi e 400 ki te whakatauira me pēhea e whakapikia ai te whakaputaranga mā te AI Waihanga.

I whakaatu mai te tātaritanga:

- ❖ ka taea te whakapiki i te 24% o ngā tūmahi mā te AI Waihanga hei hoa whakarei i ngā pūmanawa kaimahi
- ❖ ka taea te whakapiki i te 14% o ngā tūmahi, ka mutu ka whakaitihiā te wā ka pau i ngā tūmahi matatau, poroteke anō hoki

Ko tōna tikanga, ka wetekina pea e te kaimahi noa i Aotearoa tae atu ki te 275 haora ia tau tērā ka haumia anō ki ngā mahi e nui ake ai te uara. Mā te whakaputaranga nui ake, kei ngā umanga o Aotearoa te pitomata e pikia ai ngā putanga, ahakoa kei te whakahaere tonu me ngā rawa whāiti.

Mā taua pikinga whakaputaranga e whakarato te wāriū nunui ki te ūhanga o Aotearoa mā te 2038.

Ki tā mātou e pohewa nei ka hoatu pea te AI Waihanga i te NZ\$76 piriona ki te ūhanga o Aotearoa hei te 2038. Ko te tikanga nei, ka rahi ake te tapeke wāriū hokonga e pā ana ki te matapae paerewa o te NZ\$495 piriona mā te 15%, he pikinga tata ki te rua whakareanga ake o te rahi o te ahumahi ūhanga.² Ko te tūmanako ka tata rearua te pāpātanga whanake o te whakaputaranga me te GDP mā te whakamahi i te AI Waihanga. Ko te rahi o tērā painga ūhanga kei te āhua o te rahi, te tere, me te huarahi ka whāia ki te whakatinana, ā, kei te āhua hoki o te tautoko i ngā kaimahi ki te urutau ki ngā momo mahi hou.

1

Mā te Atamai Hangahanga Waihanga (AI) e tino piki ai pea te tupuranga whakaputaranga ā-tau, arā ka 15% te pikinga ake o tō Aotearoa whakaputaranga hei te tau 2038



2x

Te pikinga o te tupuranga Whakaputaranga ā-tau



275 haora

ka wetekina ia tau e ia kaimahi hei haumitanga anō ki ngā tūmahi uara nui

2

Ko te tūmanako, ka tāpiri te AI Waihanga i te NZ\$76 piriona ki te ūhanga ā-tau o Aotearoa hei te 2038.

GDP ā-tau



+15%

te teitei ake i te paerewa

Pāpātanga tupu GDP ā-tau



+45%

te teitei ake i te paerewa



Puna: (1) Tatauranga Aotearoa; (2) Pikitia.NZ (2023); (3) Ka āwhina pea te AI Waihanga me te 38% o ngā haora tūmahi; he pitomata nunui tō tata ki te rua hauritoro o tēnei mō te whakapikinga, ā, he pitomata nui tō neke atu i te hauritoro mō te whakaunoa. Mō ngā tātaritanga atu anō, tirohia te World Economic Forum, 'Jobs of Tomorrow: Large Language Models and Jobs' (2023).

Whakarāpopotonga Matua (2/2)

He hua whakataetae ō Aotearoa mō te Al Waihanga puta noa i ngā wāhi matua e toru: te noho tuwhera ki te tauhokohoko, te pitomata aronga hou, me te tūāhangā whatunga.

Ka taea te whakapiki ngā hua o Aotearoa kia tere ake ai te whakamahi, kia hangaia ai ngā arawātea ūhanga hou mā te Al Waihanga Ka huawaeretia e te wātea ki te tauhokohoko te whakawhiti hangarau, me te aha kua whakapūmautia ētahi kamupene hoko whakawaho tērā e mahi ana hei tauira 'rama' ki ngā kamupene hoko whakawaho hou e whakamahi ana i te Al Waihanga, Mā tēnei, me te ūhanga e mariu nei te aronga hou hei hoa haere me tētahi tūāhangā whatunga rawe, kua pai tō Aotearoa noho ki te hanga ahumahi hoko whakawaho hou e tino whaihua ai ngā pūmanawa o te Al Waihanga hei whakataetae huri noa i te ao.

Ka whai painga a Aotearoa i te kaha whakatinanatanga o te Al Waihanga e tana ohu mahi. Heoi, arā tonu ngā arawātea ki te whakapakari i te kōhure matihiko me te māia ki te hāpai i ngā painga ka puta pea.

Kua rikarika nei tā nga kaimahi pūkenga i Aotearoa whai i te taihuringa Al Waihanga, me te 84% e kī ana kei te whakamahia kētia e rātou i te mahi. Mā taua inenga, ko Aotearoa te whenua kua tuatoru te tere o tana whakaū i te Al Waihanga.¹ Heoi, ko te 19% anake o ngā kaiwhakamahi e whakamahi

ana i te Al Waihanga, e whakamahi ana i ngā utauta e whakaratohia ana e ō rātou kaitukumahi, ā, kei te autō tērā i te toharite ā-ao mā te ira ūrau e 4, ā, i muri i te whakaihuwaka o te ao, i Te Hononga o Amerika, mā te 18%. He mea waiwai te whakapiki i te kōhure matihiko, me te whakawhirinaki me te māia ki te Al Waihanga kia taea ai e Aotearoa te whakaiti i tēnei wehenga. Kei te tonanawe a Aotearoa i te maha o ngā ūhanga whatutoto ina tirohia ngā inenga o te kōhure matihiko, ka mutu kua āta whakapuakina e ētahi kaihautū rangatōpū tō ratou kore māia ki te whakatinana i te hangarau.

E tutuki katoa ai te arawātea o tēnei mea, te Al Waihanga, me aro a Aotearoa ki ngā āhuatanga whakahoe e ono.

Nā te korahi me te matatini o tēnei arawātea Al Waihanga ko te whānuitanga o tā Aotearoa hopu i ana painga kei te āhua o ngā āhuatanga huhua.

E nui ake ai te tūpono angitu, me āta aro a Aotearoa ki ētahi kipakipa matua e ono; te āhei ki te tūāhangā, he ohu mahi tautōhito, te noho pāuaua, he pūnaha hauropi mahi tahi, he anga kaupapahere mārama, me te whakawhirinaki tūmatanui me te whakaaetanga kia mahi i ngā mahi.

Mā te arotahi ki ūna kaha me te whakarite kua mārō te takoto o ngā kipakipa matua, ka āhei a Aotearoa te whakamahi i te Al Waihanga kia nui ake ai tō tātou taurikura, kia whakawhiti ai tātou ki ētahi ūhanga kanorau atu, whai aronga ā-matihiko.

3

Ka whakangāwari tō Aotearoa ūhanga e aro ana ki te hoko whakawaho me tōna ohu mahi tautōhito i te whakatinanatanga o te Al Waihanga, engari me māia whakapakari i te kōhure matihiko me te māia hinonga

Tauine Kōhure Matihiko

te tūnga
20 i te OECD



E 74%

o ngā kaihautū rangatōpū e māharahara ana kua hapa i tō rātou whakahaere he mahere whakatinana i te Al Waihanga

4

He mea waiwai te arotahi ki ngā kipakipa matua e ono kia tutuki ai i a Aotearoa ngā painga o te Al Waihanga.

Ngā kipakipa e

6 o te Al Waihanga

Te āhei atu ki te tūāhangā

He pūnaha hauropi mahi tahi

He ohu mahi tautōhito

He anga kaupapahere mārama

Te noho pāuaua

Te whakawhirinaki tūmatanui me te whakaaetanga kia mahi i ngā mahi

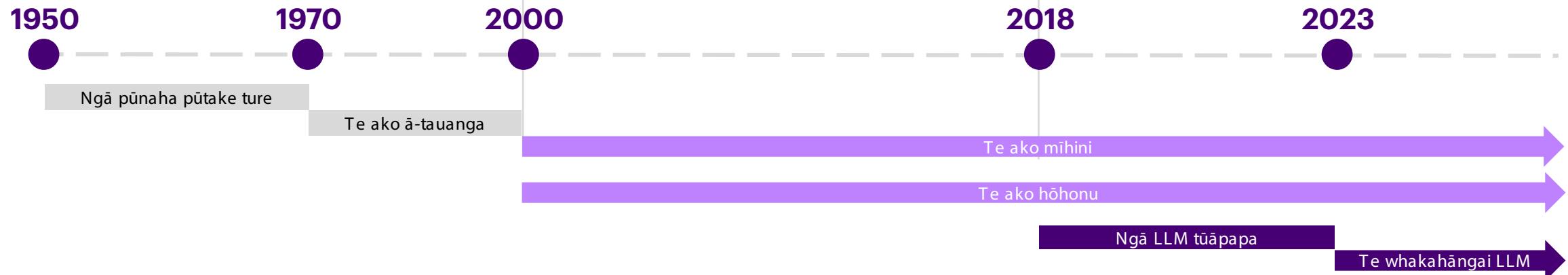
01

Ka taea e te Atamai Hangahanga (AI) Waihanga te ōhanga o Aotearoa te whakaumu



E tohu ana te AI Waihanga i te ao hou ā-rorohiko nei e taea ai te ihirangi rerekē te hanga hei uruparenga ki ngā kupu whāngai a te kaiwhakamahi

Te Ao Tātari	Te Ao Matapae	Te Ao Waihanga
<p>✓ Te aroturuki ✓ Te tātari</p> <p>❖ Te wāhanga tuatahi o te whakawhanaketanga AI, mai i ngā tau 1950 ki te pane o ngā tau 2000</p> <p>❖ I kaha whakahirinaki te hanga pūnaha AI ki:</p> <ul style="list-style-type: none"> ▪ Te whakaaro ā-pūtake ture, e whakawaeheretia ai te mātauranga mātanga ā-tangata ki tētahi huinga ture ▪ Te whakaaro ā-tauanga me te ako, e whakamahia ai ngā tikanga tauanga ki te whaihangā i ngā pūmanawa tātari me te hanga whakataunga a te tangata 	<p>✓ Te ako ✓ Te matapae</p> <p>✓ Te whakawhaiaro</p> <p>✓ Te tūhura</p> <p>❖ He mea whakawhanake ngā hātepe ki te whakamahi i ngā raraunga nui whakaharahara e whakaputaina e te ipurangi hei whakahoe i ngā tātaritanga matapae</p> <p>❖ I panaia ngā kōkirikiri i te roanga o taua wā e te putanga mai o ngā hangarau hou:</p> <ul style="list-style-type: none"> ▪ Ngā hangarau raraunga rarahi, e taea ai te rokiroki me te tukatuka i ngā huinga raraunga nui whakaharahara ▪ Ngā hātepe ako mihini e āhei ai te rorohiko te ako me te hanga matapae, te whakatau take rānei e pūtakea mai ana i ngā raraunga 	<p>✓ Te tohutohu ✓ Te hanga</p> <p>✓ Te whakaunoa ✓ Te pare ✓ Te tuhi waehere ✓ Te whakaaro</p> <p>❖ Nā ngā tikanga ako mihini i tere ai te whakawhanakehia pērā i te ako hōhonu i tautoko te whanaketanga o ngā tauira AI Waihanga tūāpapa</p> <p>❖ Ka taea e ngā tauira AI Waihanga, e mōhiotia ana hoki hei Tauira Reo Rarahi (Large Language Models (LLM)) ko ēnei:</p> <ul style="list-style-type: none"> ▪ Te whakaaro pēnei i tō te tangata whakaaro ▪ Te waihanga ihirangi hou hei uruparenga ki ngā kupu whāngai a te kaiwhakamahi puta noa i te whānuitanga o ngā arapāho ▪ Te āwhina me ngā tūmahī, mā te hoatu tautoko mataora ki ngā kaimahi, te whakarei i ngā mahi whakatau, me te whakarite kia pae te rerenga o ngā mahi



Ka taea e te AI Waihanga te tino whānuitanga o ngā tūmahi te mahi, otirā mā tana āhei ki te whakaunoa, waihanga, tohutohu me te torotoro ko te tautoko i te whakaputaranga ā-tangata te take

Kei te hangaia ngā tauira AI Waihanga tūāpapa **ki te tūāhanga mahi rorohiko pakari** (pērā i te **kapua**), ā, kei te whakawhirinaki ki ngā huinga raraunga rarahi mō te whakangungu.

Kātahi ka taea ērā te whakamahine mō ngā whakamahinga tauwhāiti, me te aha ka noho hei pūtake mō ngā taupanga.

Ka taea aua tauira te whakamahi puta noa i te matahuhua o ngā rohe, **mā te whakaunoa i ngā mahi noa**, mā te āwhina ki te **hangā** me te whakaputa ariā hou, **mā te hoatu tohutohu mō ngā rapanga matatini**, mā te **whakarei** i te whakatōmene i ngā rahinga raraunga.

He tirohanga whānui o te AI Waihanga



Te tūāhanga kapua me ngā pūmārō rorohiko

Ngā raraunga whakangungu

Ngā whatunga ā-io me te ako hōhonu

Ngā tauira tūāpapa (hei tauira, ngā LLM)

Te whakamahine i te tauira (hei tauira, RLHF¹)

Ngā tāhono me ngā taupānga



Te Whakaunoa Te whakaiti i te hiahia kia whai wāhi te tangata ki ngā tūmahi whakahaere tino whakapau wā

Te waihanga Te whakaputa ariā hou i ngā wāhi pēnei i te hoahoa hua me te hangā ihirangi

Te tohutohu me te huawaere i ngā mahi whakatau Te mahi hei pūāwhina e arataki kaimahi ana ki ngā otinga mō ngā rapanga matatini.

Te tūhurahura Te whakahohe i te tūhurahura, te uiui me te wetewete i ngā huinga raraunga rarahi ko te māramatanga pai ake te hua



Kuputuhi	Waehere me ngā raraunga	Ata	Ororongo me te reo	Ataata me te ahutoru
Whakatairanga me te hokohoko	Waihanga waehere	Waihanga ata	Kōtuitui reo	Whakatika me te hangā ataata
Whakahaere mōhiotanga	Tūhura raraunga	Hoahoa	Tiaki tūroro	Waihanga tauira ahutoru
Rangahau	Nga kaihanga paetukutuku	Ngā ihirangi pāhopori	Tautoko kiritaki	Kēmutanga me te aometa

Ngā tauira aratau maha (ka taea te tukatuka me te whakaputa i ngā momo raraunga maha)

Ka taea e te AI Waihanga te anganui atu ki te whakaputaranga me te whanaketanga GDP e heke haere ana mā te wete i ngā tauira pakihou me te whakapiki i te whakaputaranga

E pāngia ana a Aotearoa ki ngā wero ōhanga e āta kitea ai te whanaketanga GDP me te whakaputaranga iti nei, me ngā pēhanga utu e pikī ana. Kua tōraro te whanaketanga whakaputaranga mai i te hauwhā whakamutunga o te 2022, ka mutu, kua tata ki te kore te whanaketanga taha GDP Ka āwhina te AI Waihanga ki te whakahou i te kokenga ōhanga i Aotearoa, me te āta anganui ki ngā wero ōhanga tauroa.

Ka taea e te Waihanga AI te tautoko i te whakawhanaketanga o ngā tauira pakihou ki Aotearoa, ka taea te horapa ki tāwāhi. Nā tō Aotearoa rahi me tōna taratahi matawhenua kua puta he tepe noa ki tō ētahi kamupene i ētahi ahumahi kaha ki te whanake ki te korahī e taea ai e ērā te whakataetae ki ngā kamupene i ngā whenua rahi ake.

Ka āwhina te Waihanga AI ki te whakakore i aua tauārai mā te whakahoe tauira pakihou e kore e taea i mua, ko te hiahia ki ngā pūrawa nunui, ko ngā hiahia kaimahi rānei ngā take. Ka taea tērā mā te whakawhānui i te AI ki te whakaiti me te āta whakahāngai i ngā whāurunga ka hiahiatia ki te mahi i ngā mahi pakihou matua. Ahei ētahi tauira:

- ❖ ko te aronga hou me te whakawhanake hua e kōkiritia ana e te AI
- ❖ te whakatairanga whakawhaiaro me te hanga ihirangi
- ❖ te whakamahi taputapu AI ki te whakamahere me te whārere tūmahi, ngā reremahi katoa i te tīmatanga ki te mutunga.

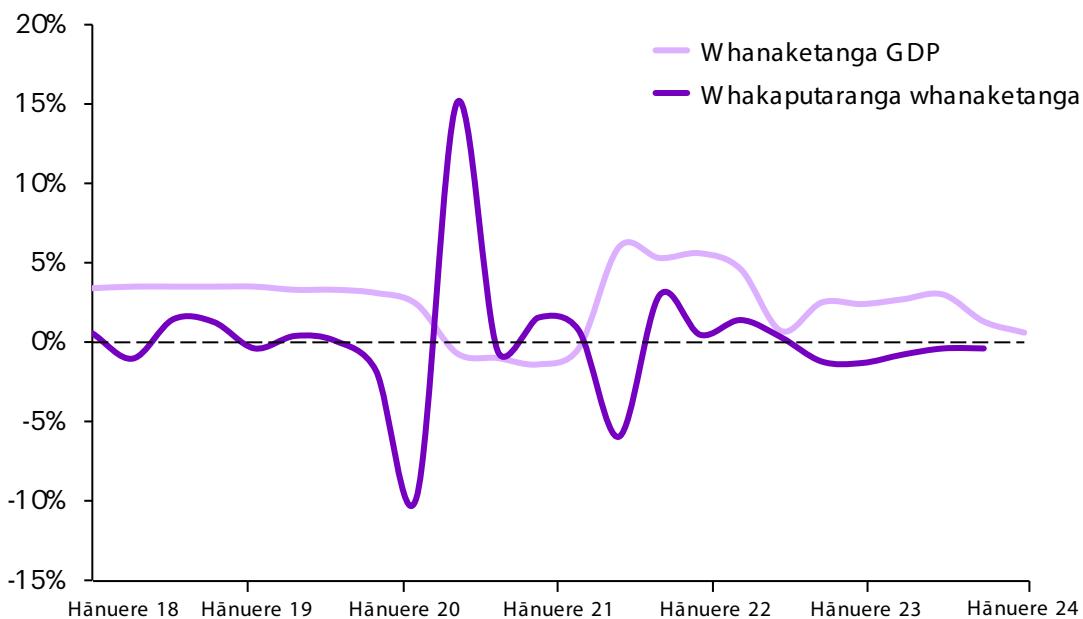
Hei ōhanga e urungitia ana e ngā hoko whakawaho, ka ahei a Aotearoa ēnei īhuatanga o te AI Waihanga te whakamahi kia noho paemua tonu i ngā ahumahi hoko whakawaho haere ake nei. Tāpiri atu ki te hanga tupunga ōhanga hou, ka whakawhānui tēnei i ngā moni ka whiwhi i ngā hoko whakawaho i tua atu i ngā ahumahi ahuwhehua me ngā rawa.



Puna: (1) Statistics New Zealand; (2) Cook, Devine, and Janssen, 'The productivity slowdown: implications for the Treasury's forecasts and projections', (2024); (2) Microsoft, 'AI in Education – A Microsoft Special Report', (2023); (3) Microsoft, 'Generative AI in Agriculture', (2024)

Te GDP me te whanaketanga whakaputaranga kei Aotearoa

Whanaketanga % ā-tau¹



"Ko te whakapiki whakaputaranga te arotahi a tō mātou kāwanatanga, ahakoa mā te whakapiki paetae mātauranga, te whakapai ake i te tūāhangā, te whakahei haumitanga, mā tētahi atu o ngā wāhi maha me aro atu."

- Nicola Willis, Minita Take Pūtea, 30 Mei 2024

E whakaatu uara ana ngā kaiwhakamahi tōmua o te AI Waihanga i Aotearoa

Te tautuhī anō i te whakaputaranga i ngā pokapū ratonga kiritaki



I whakapiki whakaputaranga a Genesis Energy me tana whakamahi i Copilot mō Microsoft 365, me te whai wāhi a te 70% o ngā kaimahi e 300 ki tētahi whakamātau, me te aha ka penapenatia te 1-5 haora i te wiki. Kua whakawhanakehia anō hoki e Genesis he utauta AI i rō kumupane mō te tātari waea me ngā hanga pātengi mōhiotanga, tērā ka āta aro ki ngā raraunga pakari me ngā anga matatika. E noho pūtake ana te AI ki ā rātou mahi, ka mutu, e noho ana te kamupene hei kaiārahi i te makete o Aotearoa.

Te ahu whakamua i te patu pirinoa i ngā kararehe pāmu



Techion

I tēnei wā, tē taea e ngā kaipāmu o Aotearoa te mōhio kua pāngia ēhea o ā rātou kararehe ki ētahi pirinoa me ngā tahumaero, me te aha ka uruhina ki te hoatu rongoā i runga i te pokerenoa. Mā tēnei e whakapiki te ātete ki te rongoā, me te aha ko tōna \$98 miriona te utu ā-tau ki ngā kaipāmu. Kua whakamahi a Techion, he kamupene kei Te Kōkika o te Matamata, i te AI Waihanga me te hangarau kapua a Microsoft ki te tino whakaheke i ngā utu whakamaimoa me te patu i te ātete rongoā. Kei te pātui a Techion ki Awanui Labs ki te whakawhānui i tēnei hangarau ki ngā rongoā ā-tangata, me te aha ka tere ake, ka ngāwari ake te utu, ka tareka māmātia atu ngā whakamāta utau.



Te whakamāori rarahi i te reo Māori



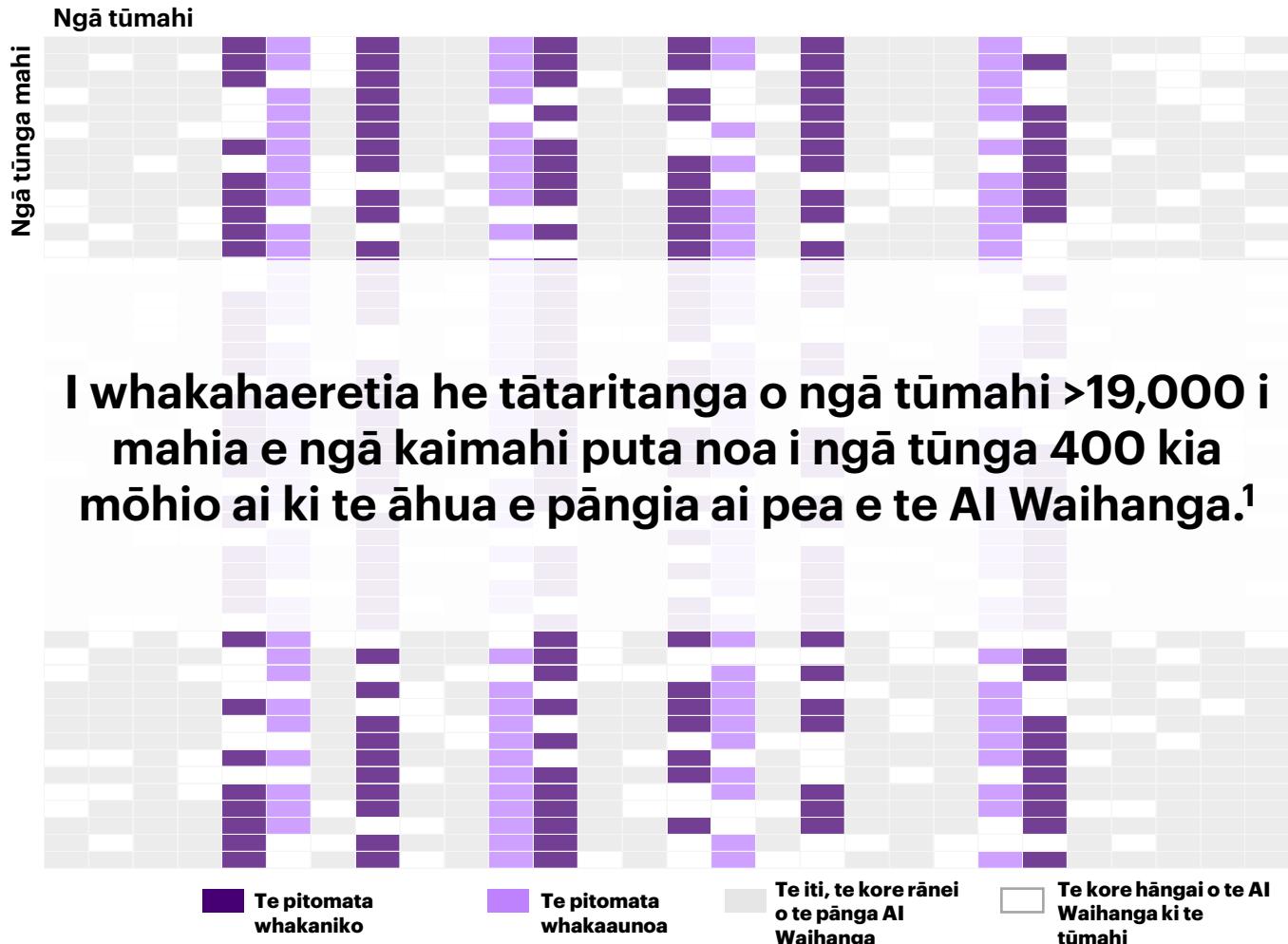
I pātui a Stuff Group ki Te Puna, Straker, me Microsoft ki te whakamahi i te AI Waihanga ki te whakawhānui i tā rātou e whakarato ana hei ihi rangi reo Māori me te whakarahi i tana āhei ki te whakaputa rongokōrero pupū ake ki te reo Māori. Ahakoa ehara i te hou ngā tuhinga reorua i Stuff, ka tino whakapikia te rahi o te reo Māori mā te AI Waihanga. Kōnei tētahi wāhangā o tā Stuff mahi whānui ki te tautoko i te whakarauoratanga o te reo Māori.¹

02

**Ko te tūmanako, ka pikī te hua ūhanga o te
AI Waihanga i Aotearoa ki te \$76 piriona hei te 2038**



Ka āwhina pea te pitomata whakapiki whakaputaranga o te AI Waihanga ki te 38% o ngā tūmahi puta noa i te ūhanga



I kite mātou ka taea e te AI Waihanga te āwhina ki te **38% o ngā tūmahi**

- ▶ Ka taea te **24% o ngā tūmahi te whakaniko** ki te AI Waihanga.
- ▶ Ka taea te **14% o ngā tūmahi te whakaunoa** ki te AI Waihanga.

Ko te tikanga nei, ka iti iho te wā ka pau i ngā mahi noa, poroteke hoki.

Kaitaunaki kiritaki



Mā te pūtaunaki kiritaki AI Waihanga e ārahi kiritaki ki ngā mahi raparongoā māmā.

Ki te pīroiroi tētahi take, ka taea e te kaitaunaki kiritaki te wawao mai.

Whai muri i te waea, ka tātari te AI Waihanga i te kōrerorero, me te hoatu urupare ki te kaitaunaki.

Rangatira pakihī iti



Ka āwhina te AI Waihanga ki te whakamahere me te whakatinana i tētahi kōkirkiriri whakatairanga pāhoropori tukipū.

Kei te whakatauria te aronga auaha me te rautaki e te rangatira pakihī, engari ka āwhina he pūāwhina AI Waihanga ki te tuhituhi i ngā taipotopito hōtaka.

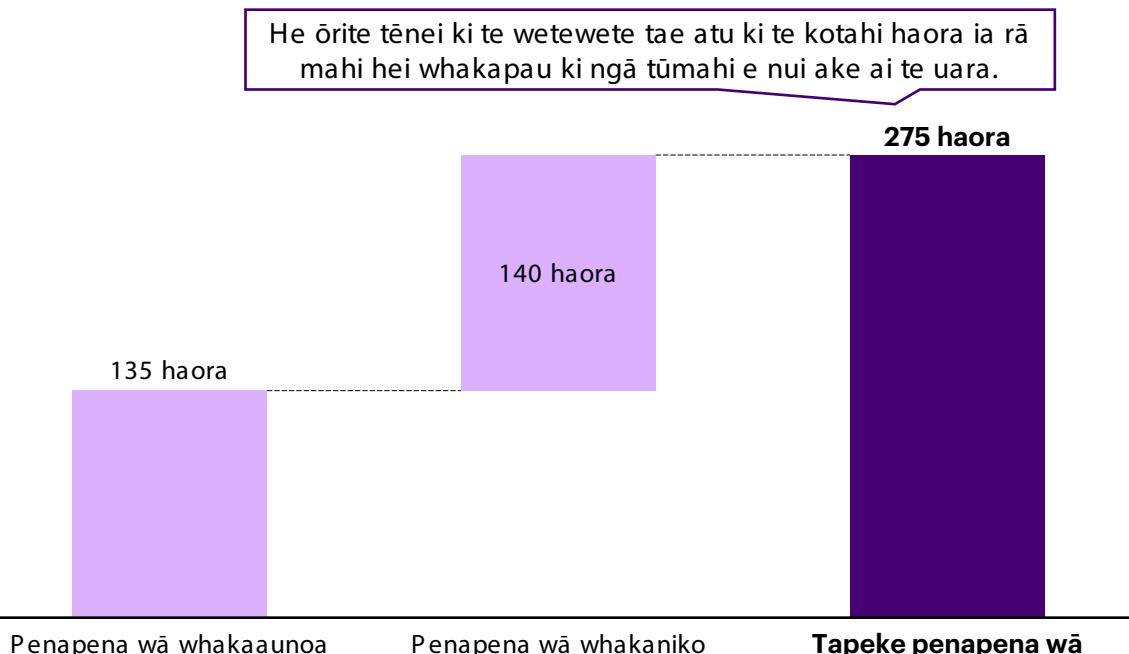
V Kia mōhio: (1) He mea whakarōpū ngā tūmahi e ai ki ngā paearu e toru: (A) kāore i te hiahiatia te pāhekoheko a te tangata; (B) ehara i te mahi noa, kāore anō hoki/rānei kia āta tautuhia; (C) ka hiahiatia te whai wāhi a te tangata e uruhina ana e te ture, ngā matatika, ngā tikanga pāpori rānei. I whakamahia he ranunga o te whakarōpū ā-tangata, ā-mīhini hoki hei whakarōpū i ngā tūmahi katoa.
Puna: Tātaritanga Accenture

E tūmanakohia ana kia whiwhi te kaimahi toharite i ngā haora 275 tāpiri ia tau hei hoatu ki ngā tūmahi uara nui, ka mutu ka whakapikia te whakaputaranga mā te 15.5% hei te 2038

Te wā ka wetekina ki ngā kaimahi hei hoatu ki ngā tūmahi uara nui i ia tau

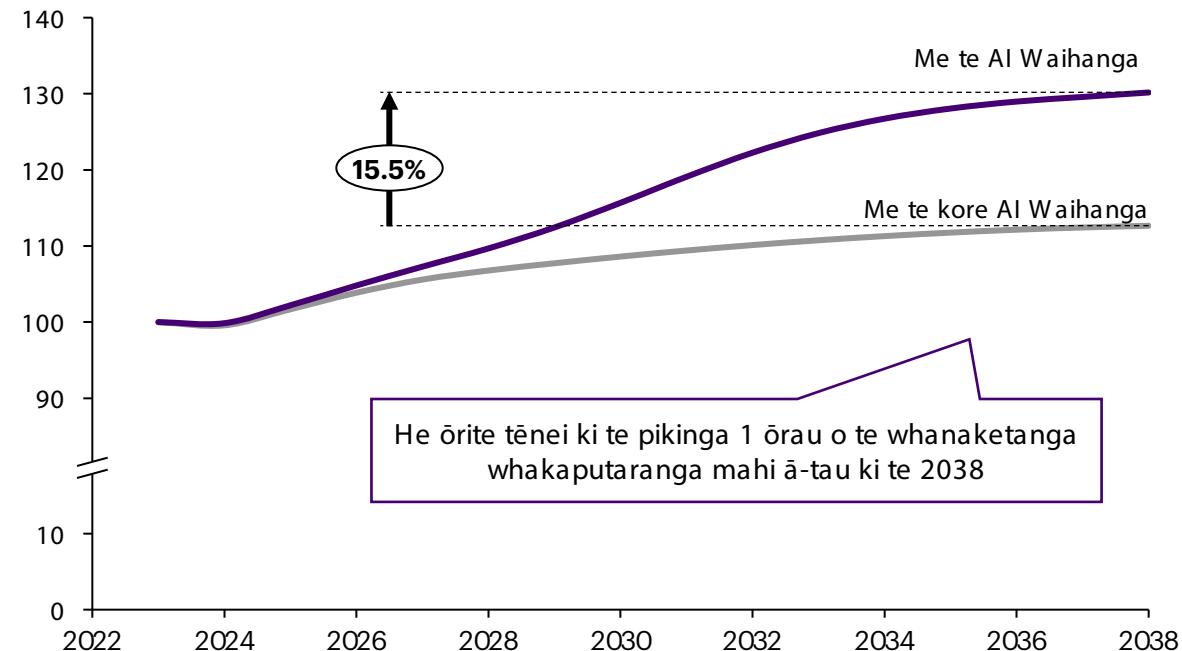
Te toharite o ngā haora ka wetekina e ia kaimahi i ia tau mā te 2038¹

He ōrite tēnei ki te wetewete tae atu ki te kotahi haora ia rā mahi hei whakapau ki ngā tūmahi e nui ake ai te uara.



Te whakapikinga whakaputaranga mahi puta noa i te īhanga

Taupū (2023 = 100)¹



Ko te matapae, ka whakapikia te whakaputaranga ā-kaimahi mā te 15.5% mā te 2038 mā te wetewete i te wā ka pau i ngā mahi noa, me te wetewete kaimahi ki te whakapau wā kē ki ngā tūmahi matatini me te hira ake. E marohitia ana me ngā mahi whakatauira ka whakapikia pea e tēnei te whanaketanga whakaputaranga mahi mā te 1 īrāu i ia tau tae ki te 2038. E tohu ana tēnei i te piktinga nunui o te whanaketanga whakaputaranga mahi kua noho i te 0.2% noa iho i te tekau tau kua hori.² Ko ngā īhua e rua e taea tēnei e te AI Waihanga ko te whakaunoa tūmahi ka tahi – mā te tango katoa i te hiahia kia mahia e te kaimahi anō – ko te whakakaha rānei i tō te kaimahi pūmanawa kia oti i tōna kotahi ka rua, arā ka tere ake, ka teitei ake te kounga o ana mahi. Hei tauira, i kitea e tētahi rangahau ka whakaitia e ChatGPT, he utauta AI Waihanga koreutu te wā ka pau tētahi tūmahi tuhituhi ngaio te oti mā te 40% te toharite.³ **Ko te mutunga anō, ko ngā utu ā-haora nui ake, ko te wāriu pakihī nui ake, ko ngā hua me ngā ratonga pai ake, kakama ake hoki te hua ki ngā tāngata o Aotearoa.**



(1) Accenture Analysis; (2) Cook rātou ko Devine ko Janssen, 'The productivity slowdown: implications for the Treasury's forecasts and projections', (2024);

(3) Noy rāua ko Zhang, 'Experimental evidence on the productivity effects of generative artificial intelligence', (2023).

E marohitia ana mā te AI Waihanga e āhei ai ngā kaimahi i ngā rāngai waiwai o te ōhanga o Aotearoa te whakapau kia nui ake te wā ki ā rātou tūmahi hira rawa

Ko te wā, e ai ki te mahi whakatauira, ka wetekina ia tau mō ngā tūmahi uara nui e te AI Waihanga mā ngā kaimahi i ētahi tūnga waiwai e rima¹

E rua ngā ara matua ka āwhinatia ngā kaimahi mā te AI Waihanga. Tuatahi ake, mā te whakaunoa i ngā tūmahi kua āta tautuhia, he mea tino tāruarua, ka āhei ngā kaimahi ki te whakapau kia nui ake te wā ki ngā āhuatanga matatini o ā rātou mahi. Ko te mea nui, ka piki pea te rata ā-mahi o ngā kaimahi katoa. Tuarua, ka taea e te AI Waihanga te whakaniko me te āwhina i ngā kaimahi ki te whakaoti i aua mahi matatini. Hei tauira, nā tana āhei ki te marohi tohutohu whakaoti rapanga mā te raupapa mahi e āwhina ana te AI Waihanga i ngā kaimahi ki te hanga pūkenga hou me te tūhura ara hou ki te hīraurau hopanga.

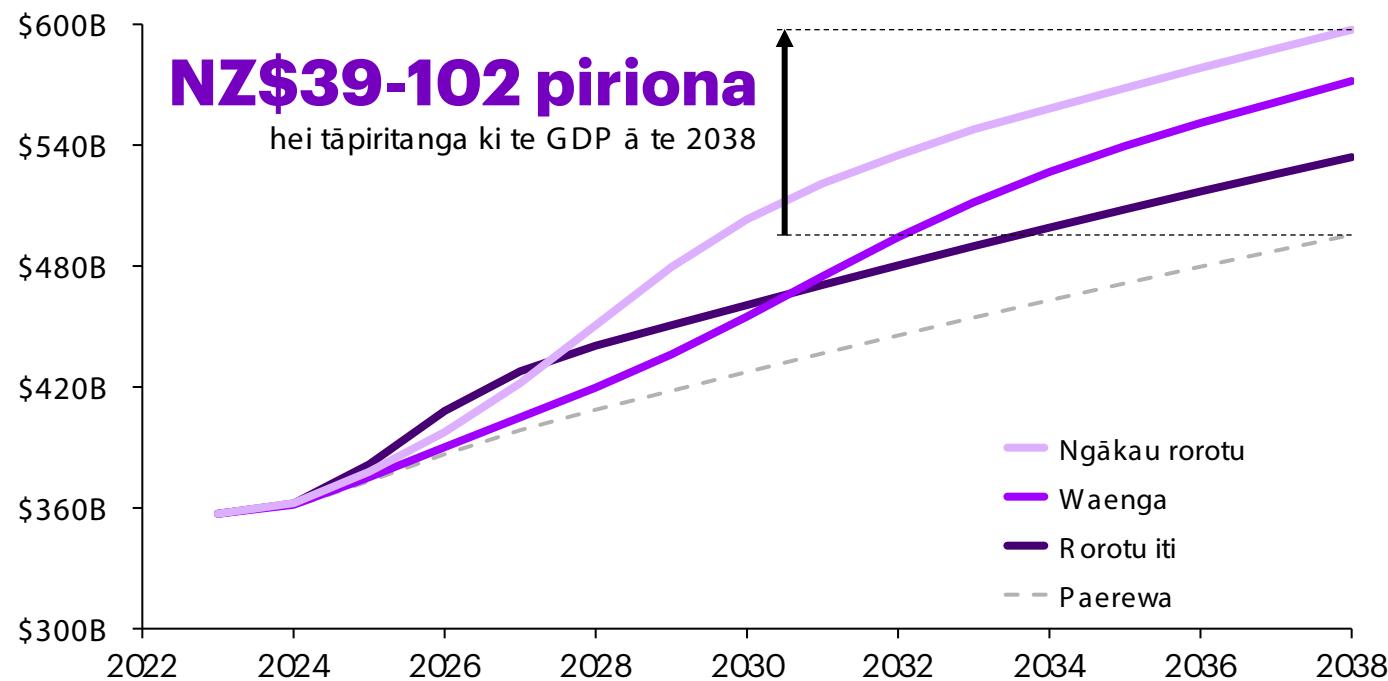
<p>Ngā kaiako kura tuarua</p>  <p>224 haora ka wetekina ā-tau +13% te pikingo o te whakaputaranga</p> <p>Ka taea e te AI Waihanga te whakarato he huarahi hou ki Aotearoa mō te anganui ki te pota kaiako me te huripoki i ngā putanga ako e heke ana. Ka taea e ngā kaiako te whakaiti i te wā ka pau i ngā mahi whakahere pērā i te whakarite me te arotake akoranga, me te whakapau i te wā nui ake i te taha o ngā ākonga. Ka whakapai ake pea e urupare inamata mā te AI Waihanga i ngā akoranga mā te āwhina i ngā ākonga ki te arohaehei i ā rātou anō mahi i ā rātou e tarati ana kia arotakea e tō ārātou kaiako.² Mā te AI Waihanga e whakarato pea i te ako whakawhaiaro, te whakautu pātai a ngā ākonga, me te hoatu tohutohu kua whakawhāitiha ki te taumata ako a te ākonga. Ka āwhina pea tēnei i ngā kaiako ki te aro ki ngā ākonga he nui rawa ā rātou matea ake.</p>	<p>Ngā kaiwhakahaere hanga</p>  <p>215 haora ka wetekina ā-tau +12% te pikingo o te whakaputaranga</p> <p>Ka āwhina pea te AI Waihanga ki te whakapiki i te whaomo whakahere i te ahumahi hanga whare o Aotearoa. Ka taea tērā mā te whakaniko i tō te kaiwhakahaere kaupapa kaha ki te aroturuki i te haumaru ā-pae, te matapae i ngā hiahia rawa, te whakahere rawa i runga i te tōtika, me te whakaaunoa mahi pērā i te whakahōtaka me te tuhi tono hoko. Mā te pērā ka āhei ngā kaiwhakahaere ki te aro ki ngā mahi uara nui pērā i te whakahere rautaki, te whakahere hononga kiritaki, te whakangungu i te ohu mahi, me te tirotiro i ngā wāhanga pīroiroi o ā rātou kaupapa.</p>	<p>Ngā kaiwhakarato kararehe pāmu me ngā hua miraka</p>  <p>218 haora ka wetekina ā-tau +13% te pikingo o te whakaputaranga</p> <p>Mā te AI Waihanga ka whīwhī pea ngā kaipāmu ki ngā tātaritanga kua āta whakawhaiarotia me te ārahitanga whakapai ake i ā rātou mahi. Kei roto nei ko te arotau hōtaka whāngai, te aroturuki i te hauora kararehe, te matapae urutā, me te whakarite ake i ngā mahere whakaputa uri, ko te whakaputaranga whakarei ā-pāmu me te toiora kararehe pai ake ngā hua. Ka āwhina anō hoki te whakapai ake i te toitū ā-taiao mā te aroturuki aunoa i ngā rerenga raraunga e pā ana ki te hauora one, ngā tukuwaro, me te kanorau koiora ki te hoatu tohutohu mō te whakahere tūraru ina maiea ake.</p>	<p>Ngā ngaio tapuhi</p>  <p>157 haora ka wetekina ā-tau +9% te pikingo o te whakaputaranga</p> <p>Mā te AI Waihanga e whakaiti pea te pēhangā ki ngā kaimahi hōhipera o Aotearoa mā te whakaiti i te wā ka pau i ngā tapuhi ki ngā tūmahi whakahere waiwai, engari he mea whakataumahia. Ka āwhina ki te hanga mahere tiaki tūroro kua whakawhaiarotia, ki te matapae huringa i ngā tūnga tūroro, te arotau i te whakahōtaka kaimahi, me te whakarato tirohangā whakarāpopoto o ngā pūkete tūroro. I tua atu, ka taea te āwhina tapuhi ki te whakamāoritanga wā tūturu mō ngā pāhekohekotanga ā-reo kē me te whakatere ake i ngā mahi pepa pērā i ngā reta tuku ā muri rūnanga.</p>	<p>Ngā kaiwhakahaere ā-tari pakīhi</p>  <p>327 haora ka wetekina ā-tau +19% te pikingo o te whakaputaranga</p> <p>Ka āta whakareia pea e te AI Waihanga ngā mahi a ngā kaiwhakahaere mahi ā-tari me te whakaunoa tūmahi me te whakatere ake i ngā rerenga mahi noa. Ka taea tērā mā te āwhina ki te whakahere hōtaka, te aroturuki i te tatukū, me te whakawhanake mahere me ngā manatunga. Mā te AI ka whakarato i ngā māramatanga e ahu mai ana i ngā raraunga me ngā tātaritanga matapae, otirā ka āwhina i te hanga whakatau me te tohatoha rauemi. Mā te pērā ka āhei ngā kaiwhakahaere ki te whakarei ake i te ruruku ā-kapa, te tautoke i te whakawhanaketanga kaimahi, te whakamahine pūnaha whakariterite me te whakapiki i te whakaputaranga whānui.</p>
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V (1) Ngā tauanga ko te tātaritanga Accenture te pūtake – tirohia te āpitihanga mō te tikanga; (2)

E ai ki te matapae, ka tāpiri ngā whakapainga mai i te AI Waihanga i te rahi i waenga i te NZ\$39-102 piriona te wāriu ia tau ki te ōhanga o Aotearoa mā te 2038

Te Pānga Whanake GDR o te AI Waihanga mā te 2038

GDP o Aotearoa, NZ\$ 2023¹



Ka whakarato pea te AI Waihanga i waenga i te NZ\$39-102 piriona te wāriu ki te ōhanga o Aotearoa mā te 2038. Arā, ka 8-21% te rahinga ake o te GDP e matapaetia ana kia piki ki te NZ\$495 piriona ā te 2038. He ōrite te matapae o waenga ki te rearuatanga o te rāngai hanga hei wāhangā o te ōhanga.² Ka piki kē te whakaputaraanga me te whanaketanga GDP, ko te matapae he 0.9% me te 2.2% mō tēnā, mō tēnā i te toharite ā-tau, ki te 1.4-2.2% me te 2.7-3.5% mō tēnā, mō tēnā ā muri i te whakamahi AI Waihanga. E whakaari ana te taurangi i waenga i aua whakatau tata i te rahi o tā Aotearoa kaha whakamahi me te whakatinana i te AI Waihanga. Mā te whakatinana tere i ngā mahi whakaunoa ki te whakahēke utu whakahaere anake e whakatiki ngā painga ki te taumata iti o tērā ka taea. Hei whakaea i te whanaketanga whakapuranga me te ōhanga e ai ki te matapae ngākau rorotu, me ngāwari noa te tere o te whakatinana me te arotahi ki te whakaniko i ngā pūmanawa o te ohu mahi o Aotearoa mā te whakamahinga rautaki o te whakaunoa e tukua ai ngā kaimahi ki te whakapau wā nui ake ki ngā tūmahi uara nui.

Kei te āhua o te huarahi e whāia e ngā pakihī, me te tere ki te whakamahi, engari ka nui ake pea tō Aotearoa GDP mā te 8-21% te teitei ake ā te 2038.

Te matapae ngākau rorotu	+NZ\$102 piriona te teitei ake o te GDP i te paerewa	+1.3% te teitei ake o te whanaketanga GDP ā-tau
Te matapae o waenga	+NZ\$76 piriona te teitei ake o te GDP i te paerewa	+1.0% te teitei ake o te whanaketanga GDP ā-tau
Te matapae rorotu iti	+NZ\$39 piriona te teitei ake o te GDP i te paerewa	+0.5% te teitei ake o te whanaketanga GDP ā-tau



03

Ka taea e Aotearoa te tino ū rawa ki ūna anō kaha me te whakamāriri i ūna ngoikoretanga mā te arotahi ki ngā kipakipa e 6 mō te angitu i te AI Waihanga



I whakahaeretia he aromatawai o ngā huanga me ngā arawātea o Aotearoa ki te whakatau kipakipa hao i ngā painga o te AI Waihanga



He mea waiwai ngā painga whakataetae me ngā arawātea o Aotearoa ki te whakawhānui i te pitomata ūhangā o te AI Waihanga.

Mā te āhukahuka i ūna kaha pēnei i te noho tuwhera ki te tauhokohoko, ngā pūmanawa rangahau aronga hou, me te tūāhangā whatunga, ka taea e Aotearoa te whakapūmau i a ia anō hei kaihautū i te ao whakawhanake me te whakamahi i te AI Waihanga Waihoki, mā te whakatutuki ngātatahi i ngā wāhi me whakapai ake, pērā i te haumi ki te kōhure matihiko me ngā pūmanawa ā-whakahaere, e para te huarahi ki te mau ki ngā painga ūhangā katoa o te AI Waihanga. I taua horopaki anō, kua tautuhia ngā kipakipa matua e noho tūāpapa ana ki te hanganga o tētahi taiao tautoko mō te AI Waihanga i Aotearoa, e huawaere ana i ngā kokenga whakamua o ngā hangarau AI Waihanga me te kōmitimiti i ēnei puta noa i ngā rāngai maha.

He painga whakataetae ō Aotearoa mō te AI Waihanga i ngā wāhi matua e toru: te noho tuwhera ki te tauhokohoko, te pitomata auaha, me te tūāhanga whatunga

Ngā painga whakataetae o Aotearoa mō te AI Waihanga

Painga whakataetae

Whakaahuatanga

1 Te noho tuwhera ki te tauhokohoko 	<p>He ūhangā tuwhera, e kōkiritia ai ngā hoko whakawaho, tō Aotearoa, me ngā ahumahi mahi tiketike pēnei i te ahuwhenua me te tāpoi kua roa e mahi ana i runga i te angitu, hei tūāpapa. Anei ētahi tauira:</p> <ul style="list-style-type: none"> • Ko ngā hua miraka he \$21.3 piriona, he 29% rānei, o ngā hoko whakawaho katoa i te 2023 • He \$8.7 piriona te wāriu o ngā rawa taiao pērā i ngā rawa rākau, kohuke me te pūngao • He \$11.5 piriona, he 16% rānei, o ngā hoko whakawaho katoa ko ngā hua mīti me te ika¹ <p>E huri ana ngā tāngata o Aotearoa ki te arawātea AI Waihanga, tērā ka kitea e tō ngā kaimahi o Aotearoa tino tere kia whakamahi i te AI Waihanga i te wāhi mahi, me te aranga mai o ngā kamupene whai aronga hou e kaha whakamahia ai te AI Waihanga, pērā i Techion, he kamupene hangarau ahuwhenua hou.²</p> <p>Ahakoa he iti tonu te hapori rangahau AI Waihanga o Aotearoa, e āhukahukatia ana ā-ao ūnā kaihautū mō ā rātou mahi i ngā wāhi pērā i te AI ā-tohu me te ako hōhonu.³ Mā tēnei e whakarato he pūhara hei hanga i te tira o ngā raukura AI me te whakangāwari i te whakawhitī mōhiotanga ā-ao.</p> <p>E kitea ana a Aotearoa hei kirirarau haepapa ao whānui, ā, i taunakitia taua tirohanga e tana urupare hauora tūmatanui ki te urutā KOWHEORI-19.⁴ Mā konei e āhei ai a Aotearoa ki te arataki i ngā whakaaro ao whānui mō ngā take matua pērā i te whakariterite i te AI, ngā rawa hinengaro e pā ana ki te AI, me te whakamahi AI i runga i te haepapa.</p> <p>He pārekereke tino pai a Aotearoa mō te whakamātautau i ngā whakamahinga e puea mai ana mō te AI Waihanga nā tōna rumakinga ki te ao matihiko, tōna ūhanga kua whakakanorautia, tōna ohu mahi tautōhito tōna rahi iti, tērā ka tuku i te whakamātauta u ā-motu, ā-utu ngāwari anō hoki, o ngā hua.⁵</p> <p>Kua whakawhanake paitia te tūāhanga whatunga ā-motu o Aotearoa, ka mutu, kei a ia tonu he raukaha nui e wātea ana, tērā ka tuku i te arawātea ki te kaha ngoto atu i te whitirau whatunga nui ake ka hua mai i ngā taupānga AI Waihanga tino whakapeto raraunga.⁵</p> <p>Nō Aotearoa te whiwhi kia whai urunga pai ki te tūāhanga taura i raro moana e whakamahia ai ngā hononga whatunga aratuku-teitei, tino tere hoki ka hiahia tia ki te whakawhitīwhiti me te tukatuka i ngā huinga raraunga rarahi e iti ai te takaroa whakawhitī i ngā rohenga ā-ao.⁵</p> <p>Taro ake nei ka nui haere tō Aotearoa āhei ki ngā āheinga kapua tino nui hei tā ngā kamupene pēnei i Micrososft whakatuwhera i ngā rohenga kei reira ngā pokapū raraunga paetata, me te aha, ka whai urunga ngā kamupene ki te tūāhanga ka hiahia tia kia rarahi te whakamahinga o te AI Waihanga.</p>
2 Te pitomata mō te aronga hou 	<p>He ūhangā tuwhera, e kōkiritia ai ngā hoko whakawaho, tō Aotearoa, me ngā ahumahi mahi tiketike pēnei i te ahuwhenua me te tāpoi kua roa e mahi ana i runga i te angitu, hei tūāpapa. Anei ētahi tauira:</p> <ul style="list-style-type: none"> • Ko ngā hua miraka he \$21.3 piriona, he 29% rānei, o ngā hoko whakawaho katoa i te 2023 • He \$8.7 piriona te wāriu o ngā rawa taiao pērā i ngā rawa rākau, kohuke me te pūngao • He \$11.5 piriona, he 16% rānei, o ngā hoko whakawaho katoa ko ngā hua mīti me te ika¹ <p>E huri ana ngā tāngata o Aotearoa ki te arawātea AI Waihanga, tērā ka kitea e tō ngā kaimahi o Aotearoa tino tere kia whakamahi i te AI Waihanga i te wāhi mahi, me te aranga mai o ngā kamupene whai aronga hou e kaha whakamahia ai te AI Waihanga, pērā i Techion, he kamupene hangarau ahuwhenua hou.²</p> <p>Ahakoa he iti tonu te hapori rangahau AI Waihanga o Aotearoa, e āhukahukatia ana ā-ao ūnā kaihautū mō ā rātou mahi i ngā wāhi pērā i te AI ā-tohu me te ako hōhonu.³ Mā tēnei e whakarato he pūhara hei hanga i te tira o ngā raukura AI me te whakangāwari i te whakawhitī mōhiotanga ā-ao.</p> <p>E kitea ana a Aotearoa hei kirirarau haepapa ao whānui, ā, i taunakitia taua tirohanga e tana urupare hauora tūmatanui ki te urutā KOWHEORI-19.⁴ Mā konei e āhei ai a Aotearoa ki te arataki i ngā whakaaro ao whānui mō ngā take matua pērā i te whakariterite i te AI, ngā rawa hinengaro e pā ana ki te AI, me te whakamahi AI i runga i te haepapa.</p> <p>He ūhangā tuwhera, e kōkiritia ai ngā hoko whakawaho, tō Aotearoa, me ngā ahumahi mahi tiketike pēnei i te ahuwhenua me te tāpoi kua roa e mahi ana i runga i te angitu, hei tūāpapa. Anei ētahi tauira:</p> <ul style="list-style-type: none"> • Ko ngā hua miraka he \$21.3 piriona, he 29% rānei, o ngā hoko whakawaho katoa i te 2023 • He \$8.7 piriona te wāriu o ngā rawa taiao pērā i ngā rawa rākau, kohuke me te pūngao • He \$11.5 piriona, he 16% rānei, o ngā hoko whakawaho katoa ko ngā hua mīti me te ika¹ <p>E huri ana ngā tāngata o Aotearoa ki te arawātea AI Waihanga, tērā ka kitea e tō ngā kaimahi o Aotearoa tino tere kia whakamahi i te AI Waihanga i te wāhi mahi, me te aranga mai o ngā kamupene whai aronga hou e kaha whakamahia ai te AI Waihanga, pērā i Techion, he kamupene hangarau ahuwhenua hou.²</p> <p>Ahakoa he iti tonu te hapori rangahau AI Waihanga o Aotearoa, e āhukahukatia ana ā-ao ūnā kaihautū mō ā rātou mahi i ngā wāhi pērā i te AI ā-tohu me te ako hōhonu.³ Mā tēnei e whakarato he pūhara hei hanga i te tira o ngā raukura AI me te whakangāwari i te whakawhitī mōhiotanga ā-ao.</p> <p>E kitea ana a Aotearoa hei kirirarau haepapa ao whānui, ā, i taunakitia taua tirohanga e tana urupare hauora tūmatanui ki te urutā KOWHEORI-19.⁴ Mā konei e āhei ai a Aotearoa ki te arataki i ngā whakaaro ao whānui mō ngā take matua pērā i te whakariterite i te AI, ngā rawa hinengaro e pā ana ki te AI, me te whakamahi AI i runga i te haepapa.</p>
3 He tūāhanga whatunga kua whakawhanake paitia 	<p>He ūhangā tuwhera, e kōkiritia ai ngā hoko whakawaho, tō Aotearoa, me ngā ahumahi mahi tiketike pēnei i te ahuwhenua me te tāpoi kua roa e mahi ana i runga i te angitu, hei tūāpapa. Anei ētahi tauira:</p> <ul style="list-style-type: none"> • Ko ngā hua miraka he \$21.3 piriona, he 29% rānei, o ngā hoko whakawaho katoa i te 2023 • He \$8.7 piriona te wāriu o ngā rawa taiao pērā i ngā rawa rākau, kohuke me te pūngao • He \$11.5 piriona, he 16% rānei, o ngā hoko whakawaho katoa ko ngā hua mīti me te ika¹ <p>E huri ana ngā tāngata o Aotearoa ki te arawātea AI Waihanga, tērā ka kitea e tō ngā kaimahi o Aotearoa tino tere kia whakamahi i te AI Waihanga i te wāhi mahi, me te aranga mai o ngā kamupene whai aronga hou e kaha whakamahia ai te AI Waihanga, pērā i Techion, he kamupene hangarau ahuwhenua hou.²</p> <p>Ahakoa he iti tonu te hapori rangahau AI Waihanga o Aotearoa, e āhukahukatia ana ā-ao ūnā kaihautū mō ā rātou mahi i ngā wāhi pērā i te AI ā-tohu me te ako hōhonu.³ Mā tēnei e whakarato he pūhara hei hanga i te tira o ngā raukura AI me te whakangāwari i te whakawhitī mōhiotanga ā-ao.</p> <p>E kitea ana a Aotearoa hei kirirarau haepapa ao whānui, ā, i taunakitia taua tirohanga e tana urupare hauora tūmatanui ki te urutā KOWHEORI-19.⁴ Mā konei e āhei ai a Aotearoa ki te arataki i ngā whakaaro ao whānui mō ngā take matua pērā i te whakariterite i te AI, ngā rawa hinengaro e pā ana ki te AI, me te whakamahi AI i runga i te haepapa.</p>

(1) Tatauranga Aotearoa - InfoShare (2024); (2) Microsoft, LinkedIn, '2024 Work Trend Index Annual Report', Microsoft (2024); (3) Artificial Intelligence Research Association, 'Aotearoa New Zealand Artificial Intelligence: A Strategic Approach', (2021); (4) New Zealand Story, 'Global Pulse Check 2022', (2022). (5) International Trade Administration, 'New Zealand – Country Commercial Guide', (2023); (6) MyFarm Investments, 'Dairy Update', (2021).

Te whakawhānui i 'ngā ahumahi tiramaroa' hei whakatupu me te whakaputa kē i te ūhangā me te AI Waihanga

He tino tohu rawa ngā kaha hoko whakawaho o Aotearoa mō ngā ahumahi 'tiramaroa', mahi tiketike hoki e nui ake ai peā te tūpono ka aro rātou ki ngā hoko whakawaho, ki te haumi anō hoki ki ngā aronga hou kia noho whakataetae tonu ā-ao. Hei tauira, kua hopukina e te ahumahi hua miraka o Aotearoa tōna hauwhā o te mākete ā-ao.⁶

Ka taea e te AI Waihanga te tautoko te tupu o aua ahumahi, ā, i tua atu i te whakawhanaketanga o ngā tauira pakīhi me ngā ahumahi hou i ngā wāhi e tino nui te tupu, pērā i ngā ahumahi hangarau ahuwhenua, hangarau koiora, hangarau āteā anō hoki. Mā konei e whai painga a Aotearoa mā te hanga puna tupu ā-ōhangā hou me te whakakanorau i tōna rānei hoko whakawaho.

Kei mua tonu ngā kaimahi mōhiohio o Aotearoa mō te whakamahi i te AI Waihanga, engari kei te akutō tā ngā kaitukumahi whakawanake i ā rātou anō rongoā AI Waihanga

He arawātea tō ngā whakahaere ka whakamahi utauta AI Waihanga ki te whiwhi uara tāpiri.

Ko tētahi ara mōhio ki tō te pakaritanga o te whakamahi AI Waihanga i te taumata whakahaere ko te nui o tā ngā kaimahi 'mau mai i tā rātou anō AI' (BYOAI)¹, te whakamahi rānei i ngā rongoā AI Waihanga ā-whakahaere katoa ka whakaratohipa e tō rātou kaitukumahi. Arā ētahi painga ka puta mai i ngā rongoā AI Waihanga ā-whakahaere katoa, tae atu ki:

- ❖ **Te āhei ki te whakarahi ake**, e tukua ana kia hoatu he tauira ki ngā tūmahi e hipa atu ai te pāhekohoko me te urupare ki ngā tono a te kaiwhakamahi takitahi.
- ❖ **Te haumarutanga**, e tuku ana kia whakawhāitihiā ngā papatono ā-whakahaere katoa kia tau ai ki ngā horopaki kāore e tautuku ngā tauira tukipū ki ngā tikanga pare raraunga tairongo, arumoni mai, kāwanatanga mai, whaiaro mai rānei.
- ❖ **Te āhei ki te whakarite ake**, hei tauira me te Retrieval-Augmented Generation (RAG), e tuku ana kia urutaungia ngā tauira AI Waihanga mō ngā huinga raraunga whai mana pupuri me ngā tūmahi tauwhāiti kāore i whakaarohia i te hoahoatanga o aua tauira tukipū.⁴

He tokomaha ngā kaimahi mōhiohio kei Aotearoa e whakamahi ana i te AI i te wāhi mahi, engari he arawātea tonu ki te whakawhānaui i te whakamahi i ngā rongoā ā-whakahaere katoa

Kua tuatoru nei te whakatauranga mō Aotearoa i te taha o Ahitereiria me Taiwana mō te maha o ngā kaimahi ka whakamahi i te AI Waihanga i te wāhi mahi (84%). E tohu ana tēnei:

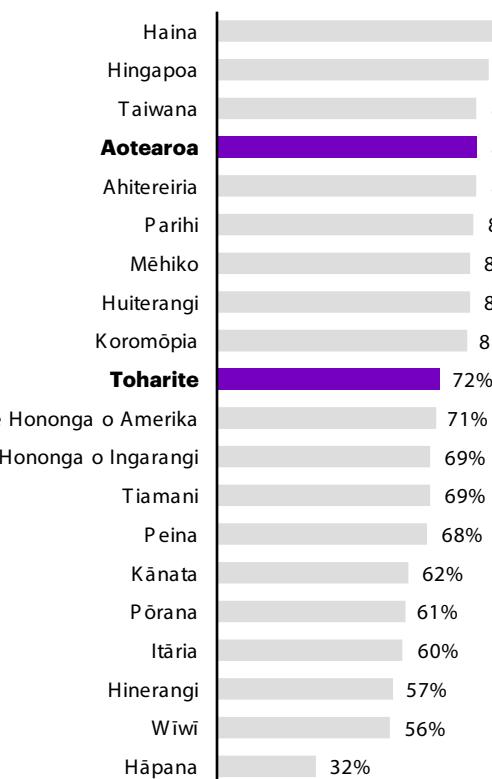
- ❖ Kua rite ngā kaimahi, kei a rātou anō hoki ngā pūkenga, ki te whakamahi i te hangarau mō ngā pūtake mahi
- ❖ He tautoko pea ngā kaimahi ki ngā mahi a tō rātou kaituku mahi ki te whakanui ake me te whakapakari i ā rātou whakamahi AI Waihanga.

Heoi, 19% anake o ngā kaimahi mōhiohio kei Aotearoa e whakamahi ana i ngā utauta AI Waihanga nā ō rātou kaitukumahi i whakarato. **Arā, kei te akutō ngā kamupene o Aotearoa i ō rātou hoa ā-ao mō te whakamahi i te AI Waihanga puta noa i te whakahaere.**

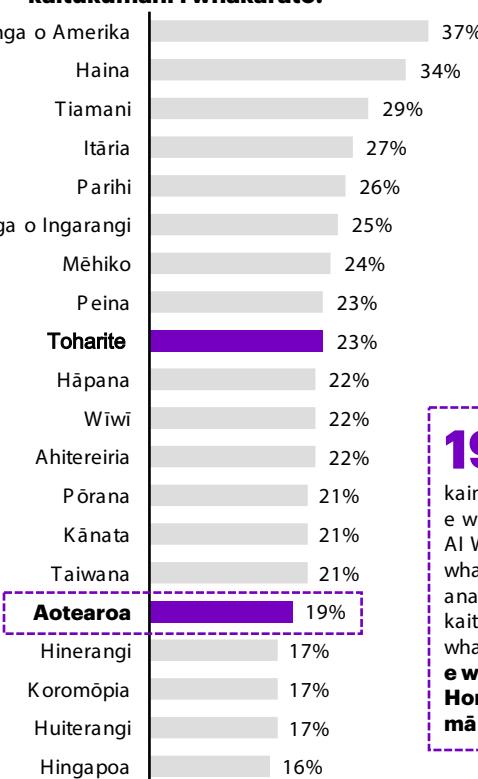
Te tokomaha o ngā kaimahi mōhiohio e whakamahi ana i te AI Waihanga ki te tokomaha o ērā e whakamahi ana i ngā utauta AI Waihanga motuhake ka whakaratohipa e ō rātou kaitukumahi^{2,3}

% o ngā kaiurupare rangahau

% o ngā kaimahi mōhiohio e whakamahi AI Waihanga ana i te wāhi mahi⁵



% o ngā kaimahi mōhiohio e whakamahi AI Waihanga ana ka whakamahi i ngā utauta nā ō rātou kaitukumahi i whakarato.



19% o ngā kaimahi kei Aotearoa e whakamahi ana i te AI Waihanga e whakamahi utauta ana nā ō rātou kaitukumahi i whakarato, e whētōtō ana i Te Hononga o Amerika mā te 18 ūrāu

Ngā whakamārama: (1) E tohu ana i te 'bring your own AI' (BYOAI) i ngā kaimahi/kamupene e whakawhirinaki ana ki ngā tauira AI Waihanga ā-kiritaki koreutu pērā i te ChatGPT, tēnā i ngā tauira e whakaratohipa ana, ngā taura whakawanake hoki/rānei; (2) ngā whenua kua tipakona e ai ki te wāteatanga raraunga. Puna: (3) Microsoft, LinkedIn, '2024 Work Trend Index Annual Report'; Microsoft (2024); (4) Kaizen Institute, 'The Rise of Customized Generative AI Models in Enterprises', (2024) (5) Knowledge workers are those who typically work at a desk.

He ārawātea tō ngā whakahaere kei Aotearoa ki te whakapakari i tō rātou kōhure matihiko kia māia ake ai ki te whakatinana i te AI Waihanga

Ko te tikanga, akutō ai ngā whakahaere i Aotearoa. i ngā kaihautū ā-ao mō te kōhure matihiko- he here tōmua mō te kōmitimiti i te AI Waihanga puta noa i te umanga

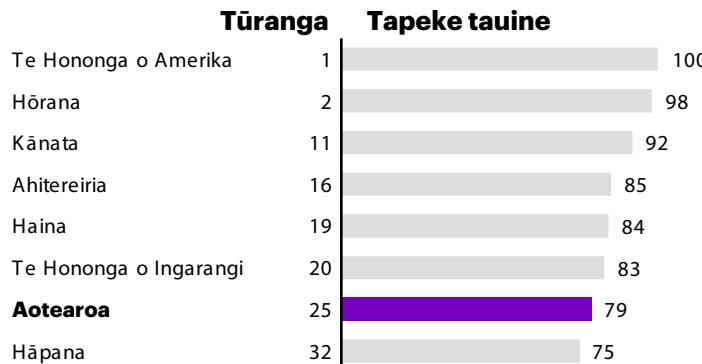
E noho tūāpapa ana he uho matihiko kaha e whakamahi nuitia ai he pūhara tōtika ā-whakahaere katoa, me te tūāhanga hou e noho kapua ana, ki te whakawhānui i te AI Waihanga puta noa i te whakahaere.¹ Kei paku runga ake a Aotearoa i te toharite mō ngā inenga kōhure matihiko, engari kē ka tonanawe i te nuinga o ngā āhonga whatutoto. Arā te maha o ngā whakahaere kei Aotearoa kua haumi ki ngā āheinga tūāpapa, pēnei i te whakahaere raraunga me te tūāhanga kapua.⁴ Heoi, e whakaatu mai ana te rangahau me whai uhi matihiko kei te haputa tonu o te kōhuretanga ngā whakahaere mō te noho rite katoa mō te AI Waihanga.¹ He whakamāramatanga wāhi noa tēnei i pērā ai te tere atu o tā ngā kaimahi o Aotearoa whakamahi AI Waihanga i tō ō ratou kaitukumahi, tērā pea kāore i a rātou te tūāhanga matihiko ka hiahiatia ki te whakamahi uta uta whakaroto he mea āta whakarite.

E ai ki ngā rangahau e whakapono ana ngā kaihautū rangatōpū o Aotearoa he mea matua te AI Waihanga, engari he iti iho tō rātou takatū ki te whakatinana i tō ō rātou aropā ā-ao

E kite ana te 77% o ngā kaihautū rangatōpū o Aotearoa i te AI Waihanga hei whakaorotau rautaki. Heoi anō, e āwangawanga kē ana tētahi ūwehenga nui kua hapa i tō rātou whakahaere he mahere whakatinana.³ Ko tēnei kore māia ina whakatairitea ki ō rātou aropā kei ētahi atu mākete tētahi āhuatanga e whakamārama ana i te kokenga pōturi ake o te whakamahia puta noa i ngā whakahaere. He huarahi e wātea ana ki ngā kamupene i Aotearoa ki te whakapakari i te kōhuretanga o tā rātou uho matihiko mā te nui ake o te haumi ki ngā pūmanawa raraunga tūāpapa me te tūāhanga kapua Mā konei e whakapakaritia ai tō ngā whakahaere kaha ki te whakamahere me te whakatinana i te AI Waihanga.

Te kōhure matihiko, ko Aotearoa ki ētahi atu whenua

Tapeke, IMD Digital Competitiveness Index²



Te tokomaha o ngā kaihautū rangatōpū e āwangawanga ana kei hapa i tō rātou whakahaere he mahere me te matawhānui ki te whakatūturu.

% o ngā kaiurupare rangahau i tīpako i te whakaae/āhua whakaae³



Ka noho waiwai ki Aotearoa te āta aro ki ngā pou e ono kia tutuki pai i a ia ngā pāinga o te AI Waihanga

Ngā kipakipa i te whakamahi AI Waihanga ki Aotearoa nei.

Te āhei atu ki te tūāhanga

- ❖ **Te tautiaki tonu i te tūāhanga whatunga tino tere** hei tūhono hono kaiwhakamahi ki ngā kaiwhakarato ratonga AI
- ❖ **Te whai urunga ki ngā rorohiko kaha whakaharahara** hei whakarato i te āheinga haumaru, takaroa-kore ki ngā tauira whatutoto tino whakapeto rauemi
- ❖ **Te whai urunga ki ngā pokapū raraunga nui whakaharahara** kei Aotearoa e noho ana e āhei ai te tuku me te rokiroki tere, haumaru, tautuku ki ngā ture, o ngā huinga raraunga nui whakaharahara

Ngā ohu mahi tautōhito

- ❖ **Te mōhiotanga C-Suite o te AI Waihanga** me ngā momo whakamahi
- ❖ **Te mōhio o te ohu mahi ki te reo matihiko** me ngā pūkenga e taea ai e ngā kaimahi te whakamahi taupānga AI Waihanga
- ❖ **Te whakahaere whakangungu me ngā panonitanga mō te ohu mahi** e āhei ai rātou ki te whiwhi pūkenga hou hei whakamahi i ngā tūmahi uara nui ā muri i te whakaunoatanga o ngā mahi noa

Te noho pāuaua

- ❖ **Te whakamahuki rautaki** hei urungi aronga hou puta noa i te whakahaere katoa me te tautuhī anō i ngā whakatutukinga paemua
- ❖ **Te hanga i te uho matihiko AI** e rōnaki ai te kōmitimitanga o te AI, e whakahohe aia anō hoki ngā pūmanawa hou
- ❖ **Te whai manawa kai tūtē** ki te whakawhanake tauira whai taunaki tērā ka whakarato i te uara tūturu, kaua ko te whakaatu hangarau hou anake.

He pūnaha hauropi mahi tahi

- ❖ **Te whai wāhitanga puta noa i ngā rāngai** i waenga i ngā rōpū kiripānga rārotō hei tiritiri mōhiotanga me te whakaara arawātea me ngā tūraru
- ❖ **Te whakauru tirohanga Māori** hei whakatairanga i te whakamahinga AI e hāngai ana ā-ahurea me te matatika
- ❖ **Te mahi tahi ā-ao** ki te whakarei i te whakawhiti mōhiotanga tērā e hāngai ana ki ngā mahi papai rawa huri noa i te ao

He anga kaupapahere mārama

- ❖ **Te nui o te whakamahia i raro i ngā waeture ao whānui** hei ārai i te whakatū tauārai ki te haumitanga me te mahi tahi puta noa i te ao
- ❖ **Te pūmautanga taha waeture** kia taea ai e ngā kaihaumi, ngā hinonga me ngā kaiwhakamahi te ū ki te whakamahinga o te AI i Aotearoa
- ❖ **Te whakarite whakamaru me te tautoko aronga hou** e whakatikia ai ngā tūraru me te whakapoapoa i te whakaūnga i taua wā tonu

Te whakawhirinaki tūmatanui me te whakaaetanga kia mahi i ngā mahi

- ❖ **Te pūrangiaho me te takohanga** e pā ana ki te āhua e mahi ai ngā tauira me te āhua e whakamahia ai ērā ki te whakatau take
- ❖ **Te tiaki i te tūmataitinga me te haumarutanga raraunga** hei whakarite kia rongo ngā kaiwhakamahi i te haumaru ina whakamahi i te AI
- ❖ **Te whakarite i te urunga mana ōrite** ki te AI Waihanga hei whakarite kia tōkeke te horahia o ana painga puta noa i ngā hapori

04

Te huarahi

v

MEET THE TEAM
WITHIN
THE CHANGING
SIGHTS
OF NEW HORIZONS

Te ine i te pānga wāriu ōhanga o te AI Waihanga

Hei whakatau tata i te nui o te whai wāhi ā-tau o te AI Waihanga ki te ōhanga o Aotearoa hei te 2038, ka tātari mātou i te pāpānga o te AI Waihanga ki te whakaputaranga rāngai mahi. Kia tutuki ai tērā, ka paheko raraunga mātou mō te utu ā-haora toharite me te tokomaha o ngā kaimahi mō ia momo mahi i te Ohanga o Aotearoa ki te pātengi raraunga Occupational Information Network (O*NET), tērā ka hora i te tirohanga whānui o ngā mahi e mahia ana i te neke atu i te 900 ngā tūnga. Kātahi ka āta mātaihia te pānga o te AI Waihanga ki ia tūmahia kia mārama haere ki te āhua e panonihia ai pea te whakaputaranga i ia tūnga mahi i Aotearoa.

Ngā penapena wā ka whakatau tatahia

He rerekē te pāngia o ia **tūnga mahi** ki te AI Waihanga i runga anō i te nui, te iti rānei ka taea ngā tūmahia i auā tūnga te whakaunoa. I runga anō o ngā **taunakitanga whakamātauau** e wātea ana mō te whai wāhitanga o te whakamahi AI Waihanga ki te penapena wā mō te kaimahi ki te whakaoti tūmahia mahi, i whakatau tatahia **ngā penapena wā** mō ngā tūmahia katoa mā te whakamahi raraunga tūmhia nā Occupational Information Network a te US Department of Labor me ngā raraunga tūnga mahi nā Tatauranga Aotearoa.

Ngā whakawhitinga mahi e tinga ana

Nā te korenga e ūrite pea te pānga ki ia whakawhitinga i waenga mahi, nā mātou tētahi **tauira matapae** i hanga mō ngā whakawhitinga mahi ka tinga pea i runga anō i te **tawhito ā-pūkenga** i waenga i ngā takirua mahi ka taea pea, me te whakamahi i tērā ki te arataki whaihanga o ngā panoni i waenga i ngā tūnga whakaratonga tuhene me ngā tūnga popono tuhene.

Ngā mahi whai uara nui

Kei te tautuhī anō hoki matou i ngā **tūnga pai ake ā-more** hei takawaenga mō ngā mahi uara nui, tērā ka whakamahia i runga i te matapae ngākau rorotu, ka inea ki ngā tohu ā-papa rangahau mō te toiora taha pūtea, taha tinana, taha hinengaro me te pūtake kua aroā, te hāngai o ngā pūkenga i whakamahia mō te whiwhi mahi, me te hira o ngā hononga i taua tūnga.

Te riwhiriwhi anō ā-tauari

E pohewa ana mātou i ngā **tauari e 3** i runga anō i te tere me te āhua e whakamahia ai te hangarau, me tōna aronga hou. Mō ia tauari, ka tātaihia e mātou he whakapikinga whakaputaranga hei ōwehenga i waenga i ngā **nama utu ā-haora** i mua, i muri hoki i te whakatinana i te AI Waihanga, ko te **riwhiriwhi kaimahi anō** he mea whaihanga me te taruna ka noho pūmau tonu ngā toha haupū rawa me ngā kaimahi, te pūtake. I āhei mātou nā te whaihanga ako mīhini te aroturuki i te āhua e nekeneke ai pea ngā kaimahi i waenga tūnga i runga anō i te **nuinga wā** ka penapenatia i ngā tūmahia i riro ngā raraunga utu ā-haora i te taumata tūnga IS CO mati-4 i Tatauranga Aotearoa.

Te matapae ā-GDP

I tātaihia te pāpānga wāriu ōhanga wā roa o te AI Waihanga nā te hoatu uara hira ki ngā **matapae Take Wāriu Hokonga (GDP)** kua whakaetia tukipūtia nā **Oxford Economics** ki te whakapikinga whakaputaranga kua matapaetia, i te āhua ānau-S whakamahere e rite ana ki te whakatinana haeretanga i roto i te wā, mō ngā tauari whakatinana whakapae e toru. E whakaatu nei ngā kitenga i te nui o ngā tupunga o ia whenua i ia tau i runga ake i tana matapae paerewa.

Ngā tauari e toru i whakamahia mō te whakatauira

E whaihanga ana ngā tauari i tēnei pūrongo i ngā āhua rerekē ka hora pea te AI Waihanga, me te aro ki te tere o te whakatinanā, te tūponotanga o ngā whakawhiwhinga mahi, te uara o te mahi, te kaha o te aronga hou, me te peinga o ngā tūnga

Rorotu iti

- Ko te taruna nei, ka tino tere te whakatinanatanga o te hangarau (**5 tau kia whakatinana katoatia rā anō**)
- Kua whiriwhiria te riwhiriwhi anō, he mea whaihanga, i te rāngai mahi e ai ki te pitomata mō te whakaunoa anake.
- E noho mārō ana te whakarato pūmanawa: tē taea e ngā kaimahi te urutau pūkenga e tutuki ai ngā hiahia AI Waihanga
- Ka tuku te whaihanga i te pikina o te kore mahi: tē taea e ētahi kaimahi te whiwhi mahi ki te whakaunoa tia katoatia ā rātou mahi.

Waenga

- Ko te taruna nei, ka pōturi te whakatinanatanga o te hangarau (**15 tau kia whakatinana katoatia rā anō**)
- Kua whiriwhiria te riwhiriwhi anō, he mea whaihanga, i te rāngai mahi e ai ki te whakarahi me te pitomata whakaunoa.
- Kāore he kore mahi i tā mātou whaihanga: ka whiwhi mahi ngā kaimahi ahakoa ō rātou tūnga, engari ka iti iho pea te uara o aua mahi.

Ngākau rorotu

- Ko te taruna nei, ka āhua tere te whakatinanatanga o te hangarau (**10 tau kia whakatinana katoatia rā anō**)
- Kua whiriwhiria te riwhiriwhi anō, he mea whaihanga, i te rāngai mahi e ai ki te whakarahi me te pitomata whakaunoa.
- Kāore he kore mahi i tā mātou whaihanga: ka whiwhi mahi ngā kaimahi ahakoa ō rātou tūnga, Ā, ko ngā mahi whai uara teitei ake te whiriwhiringa a te hātepe.

