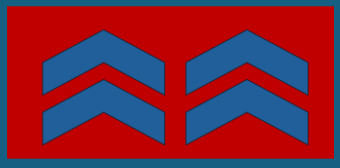
NETHERLANDS ECONOMIC MISSION
HIGHTECH & DIGITALISATION TO JAPAN

TECHNOLOGY, ARTIFICIAL INTELLIGENCE AND SECURITY TRENDS IN JAPAN

Diana Popa

RED SKY 4



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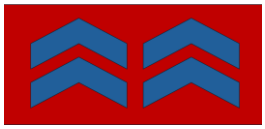

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Disclaimer. The views presented here are of the author, reflect immersive observations made during the Netherlands Economic Mission Hightech & Digitalisation to Japan that took place in May 2025, and incorporate additional documents and analysis of events in the adjacent time frame, as referenced in the text.

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Argument for a Japan – Europe key strategic partnership

The relevance of purposefully choosing and nurturing one's strategic partnerships.

The war in Ukraine, its potential overspilling effects and the tariffs imposed by the Trump administration are factors that have had destabilising effects on numerous European market segments. The first two elements determined, albeit late, substantial European re-armament efforts, with direct and indirect investments in the defence industry, while the US imposed tariffs triggered discussions on the need to find alternative trading partners in order to fill in the gaps or compensate for the costs imposed by the change in US trade policies. In my view, calls for European reorientation towards new trade agreements are driven by reactive, often short term economical and political motivated behaviour, leading to forced re-evaluation of an environment that had previously been evaluated based on assumed choices and aligned systems of values. While objective changes in the geopolitical context call for revaluations of one's own position, doing so in a short time span and in a situation of multiple, overlapping crisis only opens the door for new vulnerabilities further down the line. In such times, turning to reliable, long term partners incurs both lower transactional costs and keeps opportunity costs stable in the long run.

One such relation is that between the Netherlands and Japan.

Japan is of strategic importance for Europe in the Pacific region, being aligned technologically, economically and in terms of democratic values with European states. Several defence oriented events with high level representation from states across the globe taking place in the Indo-Pacific in the last month, as well as military partnerships between Japan and NATO and NATO members also indicate the relevance of the region for global economical, military and geostrategic affairs. While some argue that such European engagements are rather costly expansionist efforts made at the detriment of consolidating regional stability, given limited resources and capacities that need to be allocated depending on order of priorities, not staying engaged in the Indo- Pacific, and more than that, not actively working towards strengthening these individual or collective ties will limit Europe's geostrategic role in time and will require searching for alternatives that are less than optimal. Therefore, rather than opportunistically reorient towards global trade partners, Europe should purposefully choose to strengthen "traditional alliances" given already existing "Common ground" – the theme of the Netherlands mission to Osaka:

The Netherlands and Japan.

The Japan – Netherlands relationship is constructed on a history of over 425 years and to this day proudly publicly acknowledged as such. Studies and analysis on the differences between Western and Japanese cultures and business etiquette have by now become mainstream knowledge in the Western business world and intercultural communication principles are often acknowledged and assimilated prior or during cross-cultural and/or business interactions. Characteristics to be mentioned here are long term orientation, trust based cooperation relationships, clan organisational culture and a spiral approach to communication. These cultural differences require mutual adaptation in inter-cultural interactions and communications. They are also aspects to be reflected upon when comparing technology governance frameworks and acknowledging the influence of cultural approaches in developed technology solutions and governance frameworks. This should be done however from the standpoint of axiological neutrality, in order to avoid bias and cultural determinism. It is therefore relevant to investigate *if* and only after *how* context specific approaches in relation to technology development and deployment are adopted.

Cultural factors have an impact on social perceptions of AGI in Europe (the West) and in Japan (Ichikawa, 2025).

World Expo, Osaka.

Innovation, technology and aesthetics are interwoven in the showcasing of the World Expo in Osaka.

World Expo, Dutch pavilion, Osaka, May 2025. Source: the author.

❖ Immersive observations.

To the outsider, Japan is a country with a modern culture that could be characterized at first sight as a ludic one. From a Western perspective, this ludic culture is multisensorial experienced, in the turn of the spoken phrase, with the accent on the last part of the sentence, much like the Italian language, the way of visual communication, televised or in digital jn the public space, and in commercial or brand identity.

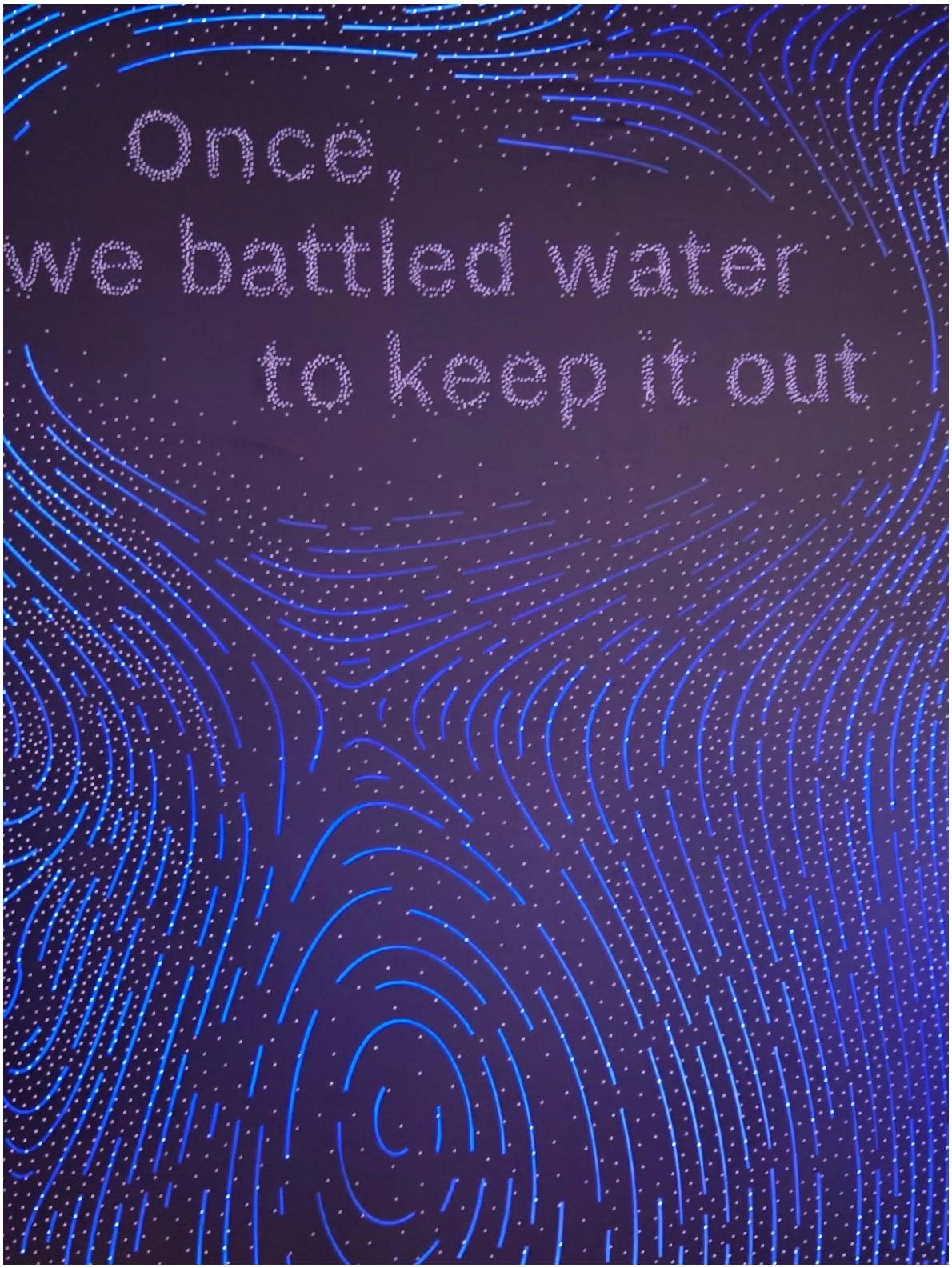
This ludic character can be one of the reasons why the popular Dutch character Miffy is known and very well received in Japan, being showcased also as a representative of the Netherlands in Japan at the Dutch exposition present at the Osaka World Expo.

Indicators of what would be characterised as a ludic culture from a Western perspective are also noticeable in company products - books, brochures, display cases.

Noteworthy is the attention given to aesthetics of both digital and physical outputs as well as integration of these parts (whether organisational, procedural, operational etc.) in holistic approaches.

This ludic character facilitated for example the wide embrace of robots within society, in order to compensate for labour shortages and is also reflected in the presence of robots in popular culture (Habuka, 2025).

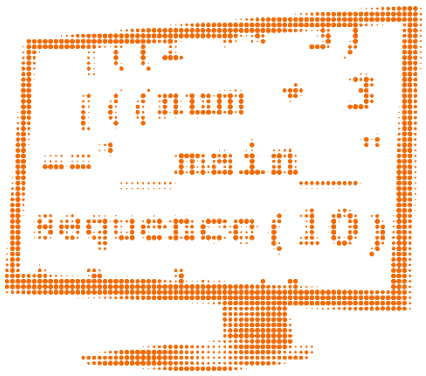
Technology adaptation can therefore be very much influenced by espoused values, that first must be acknowledged and understood and only after investigated in terms of potential for transfer.



World Expo, Dutch Pavilion, Osaka, May 2025. Source: the author.

Technology and digital trends

In regards to digitalisation and technology trends, multiple factors mark similarities in technological trends and digitalisation levels, making investigation of context specific solutions, especially in relation to disruptive technologies such as Artificial Intelligence, that more relevant. Both the Netherlands and Japan score high on the world innovation index, holding the 8th and 13th place respectively (WIPO, 2024). However, the Netherlands presents more uniformity in terms of levels of technology adoption.



Source: Social Media Kit. Economic Mission Hightech & Digitalisation to Japan.

International stimulants are strengthened by coagulated in the concept of the integrated science centre, exemplified by Keihanna Science City of Japan, bringing together government, researchers, industry and the residential sector in the same ecosystem (KRI, 2024). This concentration of resources has multiple benefits and also reflects a certain view of the role of technology and technology development in society. Adding to this, one also observes a unique approach towards embedding AI in everyday life in a symbiotic manner, presented as a visionary and cultural infused perspective towards technology's potential:

"Even in the popular fervour of the third AI boom, catalysed by generative AI, fears of singularity loom large, But own focus must transcend mere technological prowess. We envision a society where each individual harnesses and masters such advancements, unlocking boundless human potential and fostering a life of brilliance". (Asami, 2024, ATR – The Advanced telecommunications Research Institute International).

At the institute, frontier research such as AI enhancement capabilities in the area of brain science is being conducted. Computational neuroscience is one of the research areas developed at ATR. In Computational Neuroscience laboratories, brain functions through computational modelling is being researched, with the aim to develop Brain Machine Interfaces (BMI), leading to improved AI and humanoid motor learning algorithms (ATR, 2024).

In the Neural Information Analysis Laboratories, research aims to understand similarities and differences between brain and AI and lead to the development of novel AI technologies-based brain science. (ATR, 2024). Other novel applications developed here include Deep interaction science and Cybernetic Avatars.

Authentication and security through facial recognition multi-channel platforms and one key for everything (DNP) are other examples of developed and advertises solutions. From a external perspective, this user friendly and trust based technology development, enhances impact of potential security breaches due to accumulation of processed data and is suitable to a society which is not risk adverse and which has no recent experience of high levels of cyber crime.

AI deployed in the public space for automatic detection of infrastructure damage and data collection by means of deploying drones, monitoring sensors and satellites (MECL) again shows the level of technological developments and context adapted solutions.

More to the point, as a leader in the region in terms of technological development, Japan represents a bridgehead for Western democracies and economies in the Asia-Pacific region, which for current geopolitical and economic reasons is of high interest at the moment.

HTDX conference, Osaka, May 2025. Source: the author.

AI governance in Japan

The government of Japan supports different initiatives meant to develop the AI sector and close the gap between the national landscape and the other three global players in the AI arena: the US, the EU and China. A specific example is the investment in 200 start-ups developing dual use applications that include companies focusing on Artificial Intelligence.

Artificial Intelligence is part of the Integrated Innovation Strategy and publicly declared principles regarding AI deployment include responsibility and a "human-centric" approach (Japan Gov. 2024).

The use of Artificial intelligence by the government is foreseen in the National Security Strategy (NSC, 2022) in order to maximize comprehensive analysis capabilities. In Japan, risks of AI associated with national security regard the facilitation and advancement of CBRM and the use of Chinese AI models, that are also politically aligned (for example in regards to territorial claims) Habuka (2025). Adjacently, Japan develops guidelines for AI embedded defence systems (JT, 2025). As such, in the military domain, aspects considered for AI governance include human accountability, categorization into risk levels, conditions for operations safety.

Japan has a mature AI landscape in terms of usage and facilities and in terms in regulatory initiatives and structures. These presented a speedy advancement especially in the last 3 years.

Noteworthy in the national data and AI landscape are:

- the Japan AI Safety Institute (AISI) focused on research and policy development and standards for AI safety, in order to "realize safe, secure and trustworthy AI";
- the Information – technology promotion agency (IPA);
- The National Institute of Advanced Industrial Science and Technology (AIST), with several MoUs signed with Dutch research organisations and
- the National Institute of Information and Communications Technology.

These entities also engage in jointly developing policies and guidelines, such as the Data Quality Management Guidebook.

Remarkable is also the international network of collaborations that Japan has on the subject of AI, as assumed strategy with a dedicated national programme. By far the two largest numbers of international start-ups in Japan are originating from Canada and Israel (KGAP+, 2025).

A global AI initiative that was kickstarted in Japan is the G7 Hiroshima AI Process Comprehensive Policy Framework – "an international framework that includes guiding principles and code of conduct aimed at promoting the safe, secure and trustworthy advanced AI systems" and plans to develop a Tokyo Centre of the Global Partnership on AI (Japan Gov. 2025).

Promotion of AI is done from the central level, in an institutional ecosystem approach that includes the Ministry if Internal Affairs and Communications with a regulatory function and the Ministry of economy, trade and industry which with a more promotion role (Habuka, 2025). Experts characterize the position of Japan regarding the use and regulatory action over AI as being a moderate one, balanced between promotion and regulation of the technology (Japan Gov., 2023).

AI governance in Japan rests on 3 pillars:

- Promoting AI adoption across society;
- A sector specific regulatory approach rather that a holistic approach;
- Agile and multi stakeholder governance model rather then top-down/ command and control type of governance (Habuka, 2025).

The first pillar reflects the embedding of AI within society in a symbiotic manner that is done as the result of a certain vision over the world, life and society, as well as a consequence of concrete factors such as an ageing population and labour shortages. This approach is also reflected in Japan's balanced approach towards regulation of AI, supporting voluntary initiatives of business through non binding and flexible guidance rather than the EU's focus on regulation and the US's focus on market led innovation. This fragmentation could result however in delays when update and harmonisation is needed.

Adding to this is Japan's "robot friendly culture", embracing the idea of robots co-existing with humans (Habuka, 2025). Indicators of this are the presence of robots in popular culture, or institutions such as the Robot Museum, with explanations of the phenomenon including ancient animistic beliefs (Habuka, 2025).

On this backdrop, both AI and wider technological acceptance and adoption could be predicted, with anticipated discrepancies in timelines and effects manifesting between European and Japanese contexts.

Unlike the EU, Japan thus opted for a sector specific AI regulation approach, developing industry specific frameworks, non-binding guidance and a soft law approach with less sanctioning power, focused on guidance and standards. This comes to compensate the existing reticence regarding court action and the preference for settlement or reaching agreement in case of company conflict, thus making sanctioning legislation less of a demand than is the case for example in the US system (Habuka, 2025). An additional explanation for the preference to the soft law approach is the difficulty of keeping up with the speed of change and complexity of AI innovation (Habuka, 2025). Another context specific factor is the inclination of companies in Japan to be "over compliant". This is a reason why the government would rather avoid new regulation on AI (Habuka, 2025).

Current legislative proposals on AI include the development of government led strategic leadership body for the collection of information related to incidents and

issuing of guidance rather than reinforcement (Habuka, 2025). This in turn would allow the government to have a more active role in bridging the gap of diminished capacity of startups in terms of risk management measures.

Another characteristic of Japan's landscape regarding development and deployment of technology is its high standard on safety when it comes to products and services, up to the point where safety is a matter of reputation Habuka (2025). Because of the focus on safety and the black box character of AI, market adaptation can actually be slower than its theoretical potential Habuka (2025).

In tune with world wide trends, Japan also expresses concerns when it comes to frontier AI and its perceived existential risks (Ichikawa, 2025) and considered deviating from its sector based model of AI regulation in order to specifically address the catastrophic risks of frontier AI (Habuka, 2025).

AI governance in the Netherlands

The Netherlands holds the first place world wide regarding responsible AI governance (Popa, 2024) with mature governance policies developed by the centralised government in order to facilitate AI implementation in the different branches of the public sector. The Dutch policy regarding AI is in tune with the wider EU position and policy on trustworthy AI, which it supersedes in terms of development and implementation. The Dutch approach to AI risk management is oriented towards regulation and more mature in terms of regulatory actions, not as a result of timelines but as a reflection of a different approach to adoption and regulation of technology.

In terms of pressing challenges, the Netherlands observes a higher level of cyber attacks, with authorities publicly denouncing only some of the ones that were conducted against critical infrastructure. As such, mitigation and resilience measures are being initiated and implemented. Regulation and guidance contribute to raising awareness and consolidating wider resilience while investing in developing own solutions and products contributes to long term systemic autonomy. Given inherent risks of using external solutions in critical sectors and in products and services consumed in high volumes at population level, one mitigation measure is the development and use of "in house" nationally built solutions, trained on own data. Other incentives for developing these "in house" solutions are economical ones, if again, reliance on external providers brings inherent technological or additional economical risks, such as the imposing of higher tariffs, or changing export control legislation, as well as military ones, for having information exclusivity on capabilities of own systems as well as long term sustainability without the dependency on an external party for updates and maintenance.

HTDX conference, Osaka, May 2025. Source: the author.

For all these reasons, in order to mitigate risks such as technological dependencies either at acquisition moment or during the product life cycle due to the need for regular

updates inducing vendor dependency, supply chain risks, states are developing own technological solutions. The Netherlands in developing its own Chat GPT: GPT-NL, with calls for donation of Dutch data in order to train the model that is calibrated to the Dutch landscape.

The Dutch national level governance framework include the algorithm framework, a modular, comprehensive framework that can be implemented by organisations, an algorithm register where high risk algorithms are registered and information made visible. Additionally, different level initiatives on responsible AI in the military domain are conducted.

The EU, mainly through the AI Act, imposes risk level approaches, such as the requirement of registering high risk systems in a centralised EU database. In a similar vein, Japan's government collects data form companies in order to compensate for the government's visibility gap in terms of practices and to subsequently formulate regulatory action (Habuka, 2025).

The EU's focus on "trustworthy AI" also serves as a gatekeeping mechanism for market entry, while implicitly promoting EU made or EU perspective aligned products. Trustworthy AI demands trust in developers, in the data used to train the system - the data pedigree, having robust and functioning governance mechanisms in place. Through the EU AI act, the mainstream applications of AI are regulated, with high risk applications being exempted. Sector and domain specific regulation is developed for these areas, with less possibility of overarching oversight and overarching sanctioning capacity.

What is currently of note regarding risk management, not only in terms of AI, is the effect conflict has on the risk perception and security posture of states and, in a waterfall effect, state and private entities. With conflict increasing in the near vicinity, positions towards risk management will change, as will AI risk management.

This is attested by the development and deployment of AI enabled solutions on the battlefield in Ukraine.

Red Sky 4

Diana Popa
CEO & Researcher

Research into development and deployment of AI and data driven solutions with a focus on defence applications and solutions that are considered “high risk”. Research into comprehensive resilience systems, key enabling technologies and governing models for technology development and deployment.

Products & Services:

- Research and development of technology, AI and data focused solutions for the defence sector and areas that are considered “high risk“.
- Research on geostrategic positioning for the development and deployment of technology, AI and data driven solutions.
- Research on data centric solutions for comprehensive resilience programs.

Solutions & Technology:

Extensive experience in the research sector and participation in research and development projects including recent research into the development, deployment and regulation of Artificial Intelligence, commissioned project conducted in a NL-UK collaboration on the use of AI in high risk areas.

Looking for:

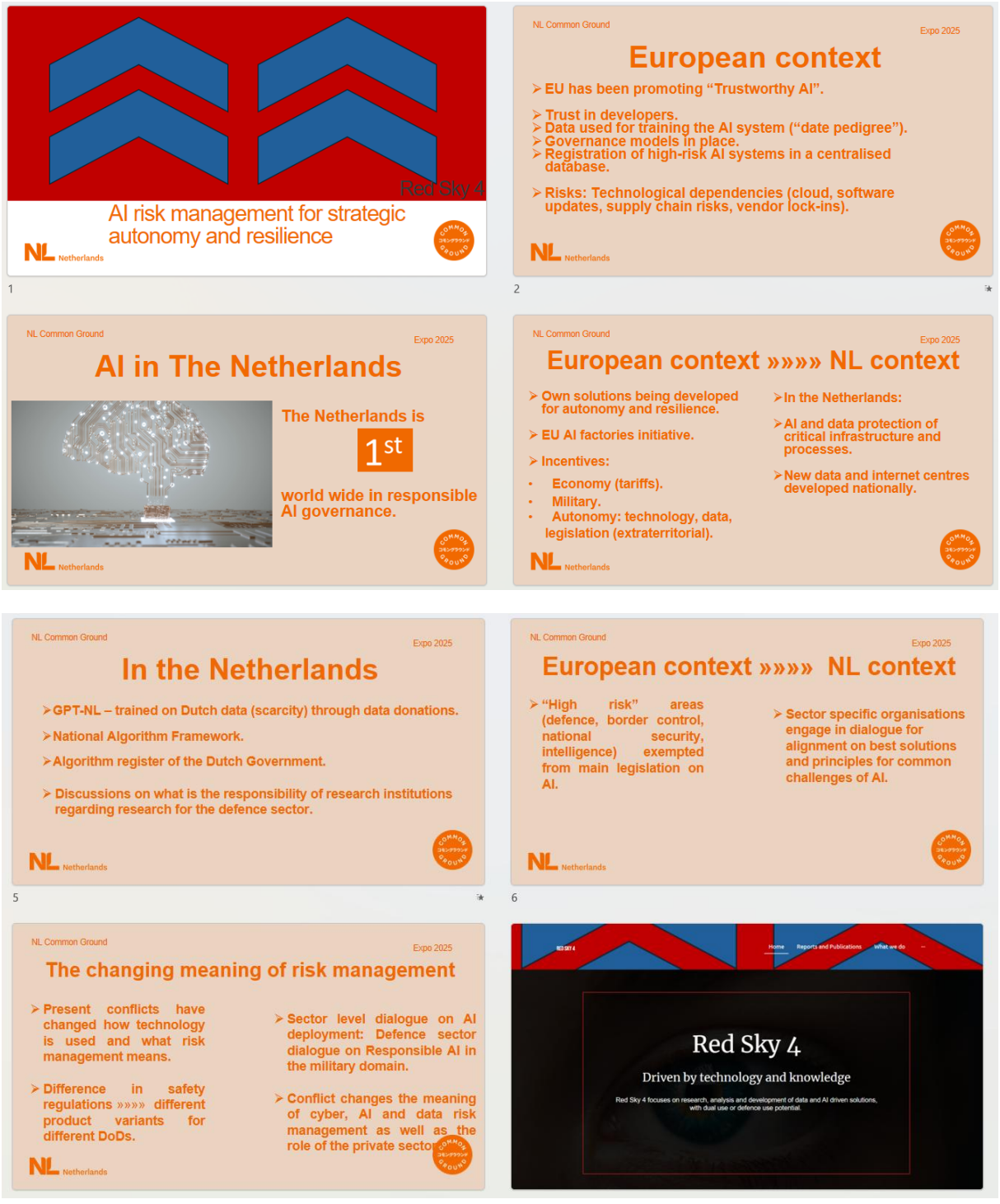
- Gaining insight into Japan’s context focused on technology and data centric solutions.
- Expanding and consolidating international expertise on technology, AI and data driven solutions.
- Partnering for researching and developing AI, data and technology centered solutions and products.

NL Netherlands

COMMON コモングラウンド GROUND

Red Sky 4. Company presentation during the HTDX conference, Osaka, May 2025

AI risk management for strategic autonomy and resilience



Presentation given by Red Sky 4 during the Netherlands Economic Mission Hightech & Digitalisation to Japan. Presentation Template from the Economic Mission Hightech & Digitalisation to Japan

Potential for global AI governance frameworks

Having attested to the different approaches and speeds towards technology adoption and regulation, one should not forget that there is no standard process of technology adoption, regardless of the universal attractivity of the respective technologies. Cultural factors play a role in technology adaptation and regulation, in seamless ways that can only be understood by means of knowledge acquirement, context immersion and interaction.

Political factors also play a role in technology regulation, adoption and update, with changes in regimes having the potential to change trends on regulatory action and fragmentation of governments having the potential to hinder legislative reform. Changes in political regimes can also lead to reversing of legislation passed by previous administration, as shown by the rescind of Biden executive order for AI safety by president Trump in 2025. Moreover, such changes also have international effects, especially on close international ties such as is the Japan - US case (Ichikawa, 2025).

Technology is not value neutral and especially in the case of complex cases such as AI it can also be politicized. An example of this is reflected in generative AI replicating politically aligned answers when it comes to regional territorial disputes, indicating that geopolitical conflict is inherited by technology either through the intent of the developers, manipulation, pollution of the data etc.

Oscillations between stringent oversight for advanced models and sector level approaches are influenced by international developments in the technology and policy fields. Additionally, external factors change stable positions towards risks and risk postures. With conflicts potentially becoming active and multiplying, risk behaviour towards technology adoption will likely also changs. Not to forget, actors with offensive goals on the geopolitical stage have different views when it comes to the limits of using technology for reaching the desired purpose than states accustomed to a defensive posture. The interaction between the two sides will affect original position, most likely in terms of modifying risk adversity levels and responses.

Divergent trends are observed world wide. International efforts of reaching universal agreement on either AI safety, responsible AI in the military field and adjacent principles such as human centred, sustainable AI etc. have indicated towards the difficulty of this universal harmonisation exercises.

Examples are the joint AI statement at the Paris summit where the UK and the US were not among the signing parties, and the REAIM summit in Seoul where China also didn’t sign. This is due to different factors, from different state objectives, perceptions on power balances and imposition of the other’s positions, adjacent interests or negotiations, different cultural perspectives, changes in security context increasing risks, changing political regimes, to name a few.

Security posture and regional geopolitical trends

From the status of what some experts labelled as a de facto US protectorate, Japan has made remarkable advancements in the last 20 years in terms of defence strategy and defence diplomacy, as well as technological development, especially in the cyber and space technologies domains (Ward, 2025). This has come on the backdrop on the increased threat perception coming from China, including China's position towards the chain islands, and the economic effects that a potential blockade or occupation of Taiwan by China would have on Japan's economy. US sanctions on China would likely also impact Japan's economy, either directly if alignment with sanctions would be required or indirectly as effect on the Chinese economy, where Japan has a considerable presence.

In its national security policy (NSC, 2022) Japan addresses concerns about China's obvert expansionist position, increased defence expenditures and ties with Russia. Alongside North Korea, the position of these states is presented in Japan's national security policy as cause for concern and factor determining a need for increased defence alertness levels and security posture. In response to an increasingly unstable external environment (Ward, 2025) Japan has therefore been increasing its defence capacity, in terms of technology, equipment and manpower.

Japan has become a strategic partner in the Indo-Pacific region for the NATO alliance and NATO member states in complementary partnerships such as the GCAP – where Italy, Japan and the UK will develop a 6th generation aircraft "comprising crewed aircraft, uncrewed platforms, next-generation weapons, networks, and data-sharing" (UK MoD, 2025) and in additional partnerships in several fields including cyber and new technologies. Joint military exercises between the UK, the US and Japan have been conducted in the region recently. An increase in defence events held in the region with a global orientation also further strengthens the ties between EU and NATO countries and the Indo-Pacific region and indicates towards the interconnectivity of regional conflicts and security solutions.

Both Europe and Japan face security challenges from state actors in their respective vicinity and as such are adapting their security posture in terms of strengthening technological defences. Increased threat levels translate into the need to shorten response time in terms of military preparedness and reaching the assumed defence objectives. Both Europe and Japan are also investing in alternative pathways and mechanisms for reaching defence production objectives, higher TRL's and stimulating national economies by means of stimulants for the private sectors and public - private collaborations. One such initiative is the advertised government investment in 200 dual use

start-ups. The programme is meant not only to develop national defence capabilities, but, as in the case of the UK (MoD, 2025), aims also to make the country an exporter of defence technology and products, in particular in the high-tech area.

This is part of a general trend of countries aiming for more industrial autonomy or resilience in the defence area for decreasing dependency risks. Yet there are also opposite views to this trend, ascertaining that decoupling in the Indo Pacific would lead to geostrategic and geoeconomic blocks that actually increase the chances for conflict. Extrapolating this point, the Australia Minister for Defence made the case at the latest Asia Security Summit that securitization imposes binary options and undermines deterrence and thus interdependency is a security enabling measure (Marles, 2025). This has been a long defended position on the benefits of interdependencies. However, as the effects of the sanctions on Russia have shown, and the estimates that any sanctions on China would have in the wider region, interdependency does present a high risk of negative economic and security effects.

There is also the matter of interconnected conflicts and global effects of regional conflicts. President Macron, speaking at the Shangri-La Dialogue, mentioned that the world is facing multi-crisis and interconnected wars (Macron, 2025). The Dutch Minister of Defence present at the same event mentioned that "What happens here [in Asia] reverberates around the world because in today's world, global security is inextricably linked" (Brekelmans, 2005). Security interdependencies are replicated across different domains, including the regulation of Artificial Intelligence and how it is used on the battlefield.

The vital role of industry in defence production and especially in defence innovation, in terms of shortening production and innovation lifecycles has been tested and proven in Ukraine and acknowledges as such by countries drawing lessons from this war theatre. This is an overarching trend between Europe and Japan. On his recent visit to Japan, the NATO Secretary General also took part in an official visit at a roundtable discussion with Japanese dual use start-ups, again indicating towards the role of the private sector for the agility of defence development.

Japan's non-lethal support for Ukraine in terms of financial contributions and collaboration between Japanese and Ukrainian companies with defence applications also stands as indication to the country's wider view on international security while it also aims to promote industrial defence collaborations with NATO member countries.

Steadily departing from the post war security status under the US umbrella, Japan's recent initiatives in the area of defence underline the fact that maintaining the pacifist character set in its constitution comes to contradict the realities of the present. As Ward (2025:16) mentions, and one might add, precisely because of the long term pacifist position, the current position of Japan looks like the country is "preparing to put itself on a 'war footing' ".

European technology and defence interests in the region

Even if technological challenges are similar, preferred and implemented solutions can be very different. The unpredictability of technology in terms of speed of development and effects of technology interacting with the specific environment is another challenge that states who want to implement technology with responsibility and accountability face in a similar way and could solve in either similar or context specific ways.

Both in the European space and in Japan, governance frameworks for developing and deploying technology that incorporates, reflects and respects in an accountable manner the system of values in which technology is being deployed are important agenda points for governments, policy makers, public and private institutions alike. Technology meant for deployment in the military sector presents particular challenges in terms of accountability and priority of principles, with common challenges likely to receive, at least in the first phase, national answers adopted based on national interests and priorities, as is the mandate of the defence function. Alignment challenges in this domain are reflected in the results of international attempts for universal alignment, as presented above. The topic of attribution of responsibility in the case of autonomous systems came up also during the latest Shangri-La Dialogue.

Given the relevance of the subject and the similarities between Europe and Japan regarding governance of technology, Japan can be an advocate in the region for responsible AI in the military. Therefore, platforms such as international conferences with inter sectorial participation and representatives from different levels, including politicians and government representatives, policy makers, militaries, researchers and scientists are vital for dialogue and initiation of broader international engagement around the topic of technological development and deployment in the military domain. A defence oriented conference taking place in the same time frame as the Netherlands Economic Hightech mission to Japan was the DSEI Japan, bringing together over 470 exhibiting companies. Another defence oriented event in the same time frame, that had a higher international visibility, likely due to the high level political representation, was the Shangri-La Dialogue that took place between 30th of May and 1st of June 2025. Here, security and technology trends and latest challenges were presented and debated by country presidents, defence specialist and defence practitioners. At the event, the Dutch Minister of Defence addressed the question of responsibility of Artificial Intelligence misreading intent and of implications of decisions regarding escalation ladders being taken by machines and not by humans (Brekelmans, 2025).

Rhetoric, self-inspection questions in relation to technological choices such as “Do we allow ambition to outpace responsibility? Or do we rise to the challenge to innovate and to regulate, to

lead and to safeguard?" (Brekelmans, 2025) reflect an options centred approach, likely not adopted by opponents. This can become an inherent vulnerability of democratic systems in terms of time needed for adoption of approaches and self-limiting choices. Adapting development speed to regulation speed might prove counterproductive, especially in the context of the need for a shift to a war mind set (NATO Secretary General, 2025).

These inherent contradictions were emphasized by the Dutch Minister of Defence: "Beyond state actors, we also face something even more unpredictable: technology that is evolving faster than our doctrines, rules and ethics can keep up with. AI is reshaping the battlefield. Algorithms influence when strikes take place, the way of defence, and who is ultimately making the ultimate call. The right information at the right time is vital for any modern military, but it must be guided by judgement, not just by data" (Brekelmans, 2025).

Additionally, these questions reflect the perspective of one of the countries that is leading in terms of AI development and AI regulation, especially in the public domain.

With the effects of technology deployment not being bound by national borders, engaging in dialogue over advantageous technological development and deployment becomes vital for shaping international behaviour. In a field where the Netherlands is a leader, advocating and persuading for compatible approaches to technology deployment does become a form of defence diplomacy and protection of self-interest. Again, deploying a silver bullet strategy in the Asia Pacific region in this regard is advantageous both in terms of concrete medium to long term gains, protection and promotion of self -interest, presence and reputation.

Additionally, Europe should continue to protect its interest in the Asia Pacific region and not cede presence by means of absence or shift of focus to other regions.

Resilience preparedness

Japan demonstrates a number of peculiarities in terms of resilience given a cumulation of factors, including: high population density, high degree of reliance on external supply chains for energy and food (NSC, 2022; Ward, 2025; a), increasing threats from the regional geopolitical context (NSC, 2022) and constant threats from natural disasters.

In terms of resilience, a country with a high population density faces, much like is the case of the Netherlands, challenges in terms of preparing for crisis if one considers population preparedness and timeframes for self-subsistence. While country level population density is higher in the Netherlands - 430,3 inhabitants/km² - than in Japan - 329,4 inhabitants/km²- (World Data, 2025) large cities such as Osaka and Tokyo present higher population densities than any major city in the Netherlands. According to the World Population View, Osaka has a population of 18.9 million and Tokyo a population of 37 million in 2025 thus more than the entire population of the Netherlands. Tokyo has a population density of 6,224.66/ km².

Such as high population density in urban constrained geographies of vertical constructions presents particular challenges in terms of crisis planning, management and resilience.

A self imposed or assimilated discipline manifested in public spaces contributes to liveability of the city as a whole, together with coordination of movement. Visibility of penetrating otherness is high, although not reacted upon in terms of behaviour adaptations.

View of Tokyo from the Tokyo Tower, May 2025. Source: the author.

If in many countries across Europe the topic of constructing or rehabilitating shelters is high on the agenda given the proximity of armed conflict and status of civil protection structures, first hand observations in cities such as Osaka attest to the presence of existing structures that can quickly be repurposed or deployed for civilian defence in case or armed conflict. Osaka has a elaborate network of underground systems, with a myriad of general purpose and specialized stores and small traditional food places, as well as some Western ones. This intricate underground maze could quickly be allocated to a civil defence function in case of armed conflict, much like we have seen in the case of the underground system in Ukraine. This underground labyrinth can serve as emergency shelter for a large number of inhabitants, and given the already existing food facilities it is already well equipped for offering first response shelter in case of calamity. Regarding the last point on means of subsistence, seen again through the eyes of the neophyte, Japan presents a true food culture in terms of diversity of products, variety of choice and time allocated to food production and consumption and to rituals of consumption. The number of stores exclusively dedicated to food items is another indication of this. What strikes the new comers' view is the density found in these places, with a different standard social distance that in the Western worlds (again given population density), the discipline of waiting at some of these places (perhaps due to reputation or individual preference) and the social interactions taking place during consumption. This density transposes then in a loud and olfactive rich environment, where food and conversation are being consumed in a tightly packed setting only partially circumvoluted by physical barriers and one that pours in the wider public space in a seamless way. From a crisis management perspective or a resilience perspective, this tradition of culinary consumption in a collective setting can prove its advantages for large scale subsistence programs but can prove disadvantageous in situations requiring social distancing or when reaching the specific locations is not possible. Arguably already build in group orientation facilitates resilience in times of crisis, when collective subsistence conditions are imposed.

Food and energy security are explicitly addressed in Japan's 2022 national security strategy, risks levels associated with the country's food security are high due to a large dependency on food and production material from overseas (NSC, 2022). A similar situation manifests itself in the energy sector, given high demands and the fact that Japan buys 95% of its oil from the Middle East (Ward, 2025; a). Reflecting on cultural differences between the advantages and disadvantaged of individualistic and collectivistic cultures in terms of approaches to resilience, it can be rationalized that an individualistic culture, suddenly forced to transfer to collective subsistence conditions would face additional cognitive strains on the population in terms of adaptation or coping mechanisms.

Work culture and space

- Immersive observations.

The work ethos and organisational culture are strength points in terms of functions for resilience.

Physical space of the work floor manifests itself rather as an extension of the home. The work floor presents additional peculiarities in terms of preparedness, with visible indicators of conditions for long time staying at the office of the employees, with a combination of office and home space markers enabling comfort (shelves with numerous pairs of standard slippers at the entrance of the work space, employees at their desks wearing socks and no shoes). This office-home fluid culture is a known trait of the Japanese work culture, where the traditional clan type of culture comes from, and given long employment durations, sometimes life-long (although arguably this trend has changed in time). This prior identification of the employee with the employer and already built in conditions of staying on the work floor easier enables the 24/7 engagement that would be required in crisis situations.

This is why crisis preparedness and resilience programs could be best conducted in a decentralised manner, through initiatives conducted at employer level.

Additionally, levels of trust are high, with the acceptance of the official delegation on the work floor of companies and institutions as indication, although sharing of the real concerns or interests of Japanese companies does not come in the acquaintance phase. Furthermore, there is emphasis on protocol and moments of passage, such as arrival and departure.

References

ATR (2024). Innovative Technology for Human Communication.

Brekelmans, R. (2025). Speech given by the Minister of Defence of the Netherlands at the 22nd Asia Security Summit The Shangri-La Dialogue. Plenary Session Managing proliferation of risks in the Asia – Pacific.

Habuka (2025). Center for Strategic & International Studies. Unpacking Japan's AI Policy with Hiroki Habuka. Available at: https://www.csis.org/events/unpacking-japans-ai-policy-hiroki-habuka.

DNP (2025) P&I Lab Tokyo Technology zone.

Ichikawa, T. (2025). Strategic Japan 2025. Norms in New Technological Domains. Center for Strategic & International Studies. Available at: https://www.csis.org/analysis/norms-new-technological-domains-japans-ai-governance-strategy

KGAP+ (2025). Our startups. https://www.kgap.jp/startups

Kansai Research Institute. (2024). Keihanna Science City

Japan Government (2025). *The Hiroshima AI Process: Leading the Global Challenge to Shape Inclusive Governance for Generative AI.* Available at: https://www.japan.go.jp/kizuna/2024/02/hiroshima_ai_process.html

Japan Government (2025). Integrated Innovation Strategy 2023. Available at: https://www8.cao.go.jp/cstp/tougosenryaku/togo2023_honbun_eiyaku.pdf

Japan Today (2025). *Japan sets guidelines for expansion of AI-controlled defense systems*. Available at:

https://japantoday.com/category/politics/japan-sets-guidelines-for-expansion-of-ai-controlled-defense-systems

Metropolitan Expressway Company Limited. Metropolitan Expressway Company Info. https://www.shutoko.co.jp/en/index/

Macron, E. (2025). Keynote address given by the President of France at the 22nd Asia Security Summit The Shangri-La Dialogue. Plenary Session Managing proliferation of risks in the Asia – Pacific.

Marles, R. (2025). Speech given by the Deputy Prime, Minister for Defence of Australia at the 22nd Asia Security Summit The Shangri-La Dialogue. Plenary Session Managing proliferation of risks in the Asia – Pacific.

Ministry of Defence (2025). Strategic Defence Review. Making Britain Safer: secure at home, strong abroad. Available at: https://assets.publishing.service.gov.uk/media/683d89f181deb72cce2680a5/The_Strategic_Defence_Review_2025_-_Making_Britain_Safer_-_secure_at_home__strong_abroad.pdf

National Security Council. (2022). National Security Strategy of Japan. Available at:

https://www.mofa.go.jp/fp/nsp/page1we_000081.html

Popa, D.M. (2024). Frontrunner model for responsible AI governance in the public sector. The Dutch perspective. AI and Ethics, SpringerLink. Available at: *https://link.springer.com/article/10.1007/s43681-024-00596-2*

Ward, R. (2025 a.).Evaluating Japan's New Grand Strategy. IISS.

Ward, R. (2025 b.). Japan Memo. Key takeaways from the 22nd IISS Shangri-La Dialogue with Professor Jimbo Ken. Podcast.

WIPO (2024). Global Innovation Index 2024 (GII). Available at: https://www.wipo.int/web-publications/global-innovation-index-2024/en/gii-2024-results.html

World Data Info (2025). Japan – Netherlands comparison. Available at: https://www.worlddata.info/country-comparison.php?country1=JPN&country2=NLD

World Population View (2025). Osaka. Available at: https://worldpopulationreview.com/cities/japan/osaka

Popa, Diana (2025). Netherlands Economic Mission Hightech & Digitalisation to Japan. Technology, Artificial Intelligence and security trends in Japan. Red Sky 4.

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