



H&M Group

Case study

Name of initiative

Responsible AI Framework

Implementing organization

H&M Group

Initiative type

Artificial intelligence (AI) policy

About the initiative

In 2018, the H&M Group initiated the development of a Responsible AI Framework, including nine key Principles, and has since worked to design, deploy and utilize internal AI applications with the goal of being ethical and sustainable. The company is currently reviewing the Framework, originally aligned with human rights, to adopt a child-rights lens.

Alignment with UNICEF Policy Guidance on AI for Children

The initiative has aimed to:

- Prioritize fairness and non-discrimination for children
- Provide transparency, explainability and accountability for children

Location

Sweden and Global

Launched

Operationalized internally within H&M Group

Overview



The fashion retailer, H&M Group, is increasingly relying on the capabilities of artificial intelligence (AI) to help improve its supply chains, benefit customers and reach its sustainability goals. In order to do so ethically, H&M Group set up a Responsible AI Team in 2018, which has conceived and deployed a practical Checklist to be used by its internal AI Teams. This policy aims to identify and mitigate unintended harms that could arise from integrating AI techniques into its business operations.

This policy rests on nine key Responsible AI Principles that were developed in-house, based on research and collaboration with external partners. The Principles are practically applied through a 30-question Checklist and assessment tool. Every AI project or product team, such as a personalization engine or supply chain optimization project, is expected to participate in a review process with the Responsible AI Team to check the product against

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the Framework. After deployment, each AI product is reviewed on a regular basis to confirm that it is still effectively meeting the requirements. If not, mitigation measures are deployed to reinforce the Responsible design standards of the product.

Importantly, H&M Group aims to apply its Responsible AI Principles not only to its own products designed and developed in-house, but also to AI products and services from third-party vendors. Since H&M Group is committed to leading the change towards Responsible AI in the retail sector, working with and engaging vendors on this topic is an important part of the Responsible AI Team's agenda.

Context and project origins

In the last decade, AI has [become](#) exponentially beneficial in helping to address real-world issues experienced by customers and manufacturers. With its capacity for predictive data analysis, AI can optimize a fashion retailer's supply chain. This can help the company towards achieving its goal of producing and delivering the right products for its customers - to the right store, at the right time. For instance, Weekday, one of the H&M Group brands, launched an AI-based [Body Scan Jeans](#) pilot in collaboration with external partners. Using a 3D body scanner and algorithm technology, each pair of jeans are uniquely customized to the wearer, as patterns and measurements are based on individual body scans performed in-store. The customer can virtually try on different styles of jeans on a digital avatar and then pick up their jeans in-store or have them delivered a few weeks later. This example illustrates a personalized, on-demand production of jeans which aims to provide a unique custom fit, reduce returns, and reduce unnecessary production by only producing what the customer wants.

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However, adoption of AI systems for supply chain optimization or personalized customization raises a number of ethical questions and concerns, such as: Would AI unduly influence human behaviour? Would AI discriminate against certain groups? As the consequences of using AI can be difficult to foresee, it is important to anticipate and consider its wider human and societal implications, which is an important aspect of practicing Responsible AI.

In this context, H&M Group's Responsible AI Team created a Checklist with input from various internal stakeholders representing, for example, sustainability, human rights and data privacy, as well as external partners. For the past three years, the Checklist has been used as an assessment tool by all of the company's internal AI product teams, as well as external partners, and has been continuously updated and fine-tuned. This policy effort has also been cross-checked with other publicly available assessment tools on Responsible AI, primarily the [Ethics Guidelines for Trustworthy AI](#) produced by the European Commission's [High-Level Expert Group on Artificial Intelligence](#).



About the AI policy

The H&M Group's AI products are designed in accordance with the following guiding Principles: focused, beneficial, fair, transparent, governed, collaborative, reliable, secure, and respect for privacy (in the updated version, this point will be renamed 'respecting human agency') (see figure 1 and table 1). The Checklist allows the product team to discuss, deliberate and understand if the AI product is meeting the nine Principles for Responsible AI. Some of these questions include:

- > Does the AI product have one clear purpose to fulfil, directly linked to business requirements and needs? Is it ensured that the application of AI for this purpose does not go against the H&M Group's sustainability goals and the company's Human Rights Policy?
- > Has the team assessed both positive and negative effects on different stakeholders and potential trade-offs? Has the team assessed relevant ethical Principles, and anti-discrimination legislation applicable to the AI product?
- > Has the team discussed how the AI product would affect vulnerable or under-represented groups? Are potential biases, intended or unintended, identified and raised for discussion? Are there mechanisms in place (built into data preparation, algorithmic modelling or as adjustments to output) to avoid creating or reinforcing unwanted bias?

Every AI initiative is expected to go through a multi-stage assessment in which the product team performs a Responsible AI Checklist review with the designated Responsible AI lead. A mitigation plan is then conceived, and the AI system is reviewed on a regular basis. This collaborative and iterative process helps development teams identify and discuss different types of potential risks and ways to try to prevent and manage them, both at the onset and throughout the lifecycle of the product. At a meta-level, it also seeks to create alignment between the values of the H&M Group and the use of AI through its business operations.

FIGURE 1: H&M GROUP'S RESPONSIBLE AI ASSESSMENT PRINCIPLES

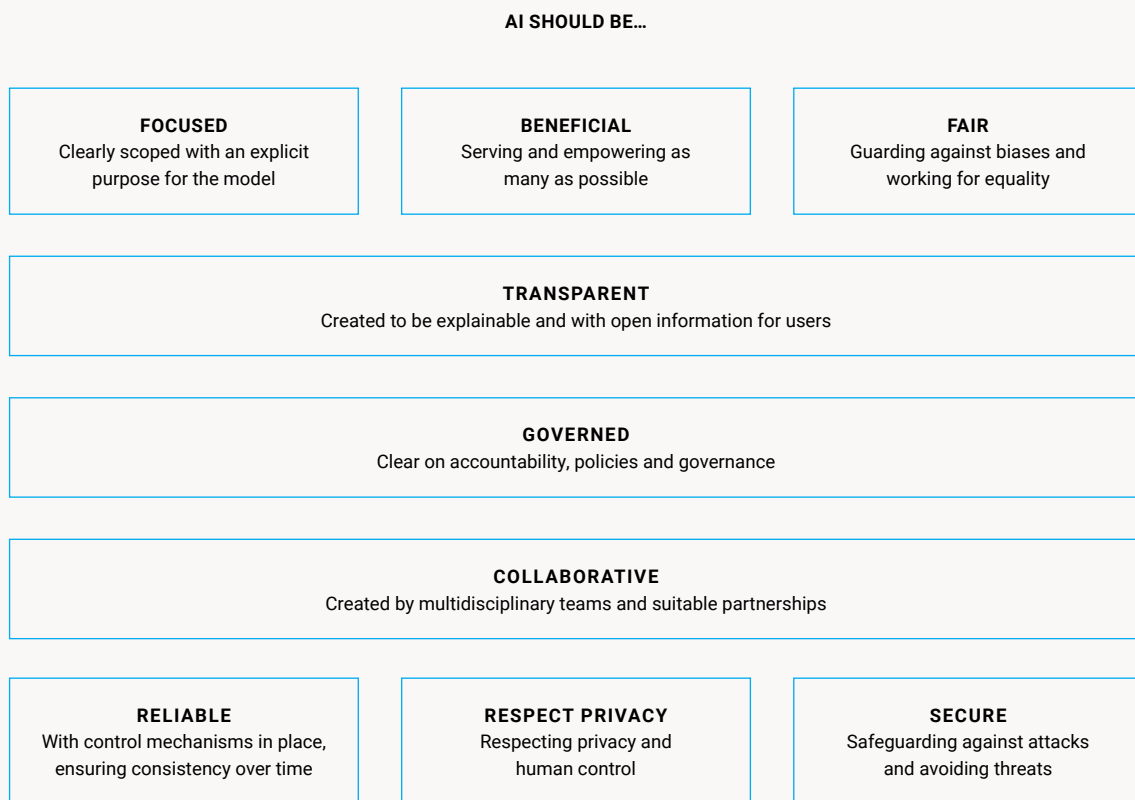
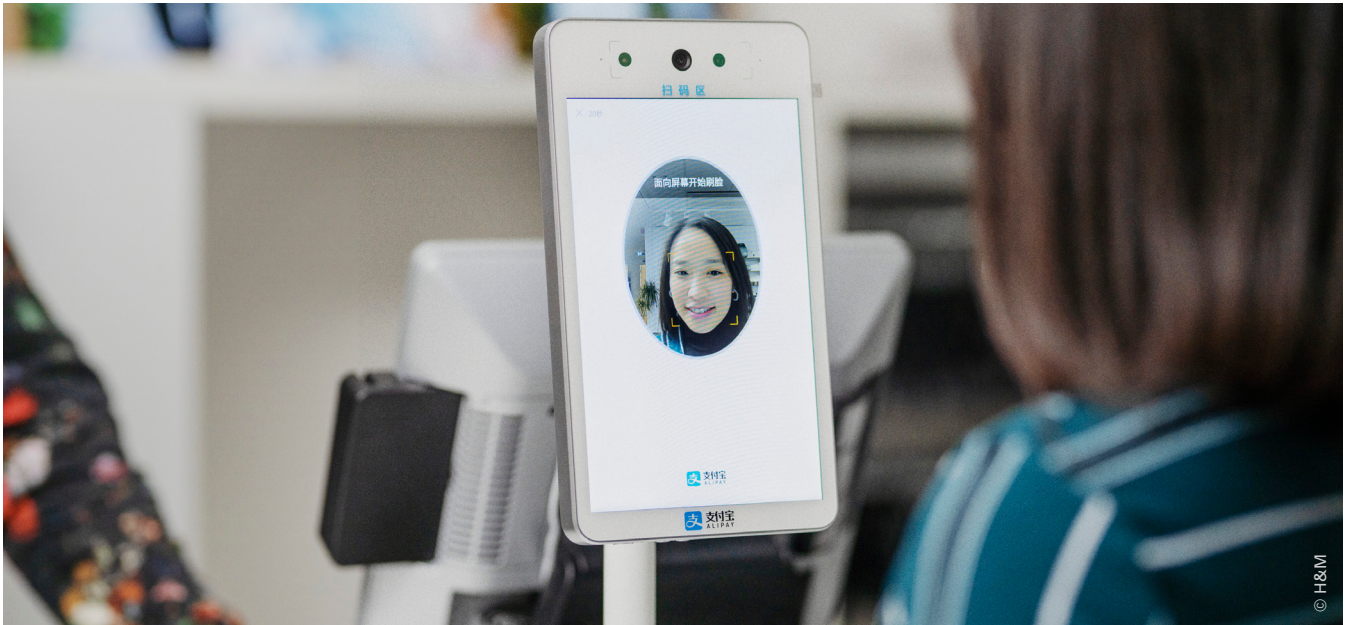


TABLE 1: RESPONSIBLE AI PRINCIPLES EXPLAINED

Focused	Clearly scoped with an explicit purpose for the model.
	AI is to be designed with a specific intent – one that fulfills a specific need.
Beneficial	Serving and empowering as many as possible.
	An AI product should benefit customers, employees and other end users – not just the company.
Fair	Guarding against biases and working for equality.
	Design and development teams should be keenly aware that AI can introduce biases or amplify existing societal biases that can lead to discrimination.
Transparent	Created to be explainable and with open information for users.
	Transparency empowers users through their interactions with AI products. Users, whether internal employees or customers, should be able to readily understand the AI products that they are using or interacting with.
Governed	Clear on accountability, policies and governance.
	There should be a clear chain of authority and reporting as well as proactive policies that govern the development and implementation of AI to ensure oversight and accountability.
Collaborative	Created by multidisciplinary teams and suitable partnerships.
	By entrusting design and development to diverse and multidisciplinary teams, more perspectives are incorporated in the process, thus reducing biases and improving AI products.
Reliable	With control mechanisms in place, ensuring consistency over time
	Reliable AI provides a consistent experience for users, one that they can trust.
Respect Privacy	Respecting privacy and human control.
	AI is sometimes trained on customer data, which must be secured and handled with a high level of care and protection. Data minimization and proportionality in data collection must be respected.
Secure	Safeguarding against attacks and avoiding threats.
	Data intensive technologies such as AI are rich targets for cybercriminals. Proactive and continuous security must be implemented both to safeguard data and earn user trust.

Note: The above table is UNICEF's explanatory interpretation of H&M Group's Responsible AI Principles.



Since the inception of the Responsible AI Team, emphasis on building the right culture and awareness around Responsible AI across the company has been a strategic aim. Therefore, H&M Group has developed a set of discussion and assessment tools to increase the knowledge and awareness about Responsible AI across the organization and identify possible ethical and societal risks that may result in personal or collective harms.

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For instance, the company created the Ethical AI Debate Club to help development teams, colleagues across departments, and external collaborators practice different forms of thinking and reasoning about a wide set of ethical challenges that the fashion industry may face in the near future, given the increasing popularity of AI and data-driven technologies. Routinely and through informal, yet vigorous, debate sessions, teams are tasked with arguing in favour of or against plausible, yet hypothetical, AI projects or products.

An example of these fictional products presented by the H&M Group include an AI voice-assistant named Mauricio to whom users are entrusting unexpected information far beyond the scope of sales (involving for example, romances, personal habits and desires). The behavioural data gleaned would be of value to the company, but many of the customers include teenagers. The Ethical AI Debate Club would then discuss the issue: should Mauricio be used to improve sales or be shut down?

Another topic of debate was the fictional program called the ‘mood managing store’, in which an emotion-tracking and facial recognition system would use detailed data analysis about a customer’s behaviour, perceived emotional state and preferences to personalize their shopping experience. These subliminal cues would aim to lift the customer’s spirits, from the music played, to the intensity of lighting, to tailored advertisements and sales presented on screens in store. Yet, customers would not be aware of this usage and would not have consented to their emotions, behaviours and personal data being tracked or manipulated. The group would then discuss the case and debate whether or not the initiative would be ethical.

The Ethical AI Debate Club provides a space for free discussion that is open to internal colleagues and external partners. The H&M Group also uses other methods (such as consequence scanning, red teaming¹ exercises and others) that rely on anticipatory and collaborative discussion and reflection in an attempt to better understand and foresee the human and social implications of an AI product, as well as any potential ethical quagmires that may present themselves.

¹ Red teaming is the practice of rigorously challenging plans, policies, systems and assumptions by adopting an adversarial approach.

Application of child-centred requirements

H&M Group's Responsible AI Framework has been designed in alignment with their commitment to human rights and is being updated to focus on children's rights in the context of AI. While the company is not developing AI products that target children specifically, the Responsible AI Team wanted to better understand and address potential indirect implications for children. Their policy is aligned with the European Union's [Ethics Guidelines for Trustworthy AI](#), which recommends identifying AI's potential effects on under-represented and vulnerable groups, including children and adolescents. The H&M Group has initiated a planned review of their Responsible AI Principles and tools and identified an opportunity to further promote two child-centric requirements that form part of the [UNICEF Policy Guidance on AI for Children](#), namely: prioritizing fairness and non-discrimination, and providing transparency, explainability and accountability for children.

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To proactively identify potential implications for children in its policies, the Responsible AI Team has set up a working group with relevant stakeholders, including their departments on Human Rights and colleagues from relevant business units across the company. Through various workshops, this working group has helped identify possible scenarios where AI products interact with children and then analyse any potential unintended consequences. The next step in the project has been to map and address potential gaps in H&M Group's existing Responsible AI Checklist, update the Checklist and add required questions, starting with the child-centric requirements specified below.

Prioritize fairness and non-discrimination for children

The Responsible AI Principles explicitly address the issue of fairness and several questions on the Checklist are designed to ensure that any AI product remains fair for all users. The Responsible AI Team has suggested that they will extend their Checklist to include questions that specifically address how children may be impacted by H&M Group's use of AI in sales and business

operations. Such questions would be developed to include the protection of children from potential biases and unintended consequences. This will require not simply treating children as a homogeneous group but considering different contexts in which children could be discriminated against, including in light of their developing capacities.

In addition, the team plans to consider children as a key stakeholder group in the ongoing development of guidelines that strongly emphasize ethical and fair use of AI and data. More specifically, the team envisions the participation of children in imagining and anticipating future uses of AI and data-driven technologies and understanding the implications for them.

Provide transparency, explainability and accountability for children

Moving forward, H&M Group plans to integrate requirements around transparency, explainability and accountability through discussions with stakeholders and design teams. When needed, the team will deploy mitigation strategies to provide transparency about H&M Group's use of AI, data and analytics. In cases where products have been designed for children, transparency will be provided using child-friendly language. This is a forward-

looking measure as the H&M Group currently does not have any AI products designed specifically to interact with children. In order to equip the company for the future, the team wants to make sure that its assessment is sufficiently articulated to identify and capture child-related features and mitigate issues accordingly.

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In the course of updating the Responsible AI Principles and Checklist, the H&M Group has recognized that the uniqueness of children has not been made explicit in the Framework and tools. Hence, the expanded elaboration of the Principles has distinguished children from the broader vulnerable and under-represented groups throughout the text. More specifically, for example, a new question has been included, asking the AI product team to thoroughly consider the

effects of AI products on children and to ensure measures are included for the protection of children's rights. Teams are reminded that children's agency, experience, interests, needs and concerns are different from adults. H&M Group's AI products should consider this difference and ensure children's rights are protected.

One of the key methods that the H&M Group plans to use is a regular review and follow-up process, which will allow them to examine which AI products are affecting children. Based on this examination, the development teams will take steps to better protect children's rights and help identify possible risks early.

Findings and future challenges

Acknowledging that children might engage with AI products that have not been designed for them, H&M Group understood the need to incorporate additional design features and questions into their process to account for these potential situations. Through questions posited in the Ethical AI Debate Club, H&M Group has already worked to proactively identify potential concerns in AI products, and the team is acquiring the skills and methods to help alleviate these issues. Although further work is needed to ensure that child-centred requirements are being applied throughout the design process, H&M Group is developing a road map to integrate comprehensive safeguards and mitigation strategies by taking into account the ways in which children will interact with AI products, or be indirectly impacted by them.

H&M Group recognizes that emphasis on multi-disciplinary and cross-functional collaboration for Responsible AI across the company is a strategic effort. Other important methods and tools involve relying on the practice of foresight, using cross-field and collaborative skills and methods to anticipate problems – such as fictional scenarios, and different types of consequence-scanning and ethics red teaming. Such collective practices can help assess the human and social implications of AI and data analytics, particularly when they concern vulnerable groups such as children.

The ongoing work of the H&M Group highlights the need for Responsible AI experts and teams to review their guidelines and processes to consider children as a distinct user group, as well as use the tools to identify and mitigate the consequences that AI products could have on children's rights.

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As any updates to the Framework and tools take time to be entirely adopted and operationalized in the organization, one focus area that H&M Group anticipates is to efficiently onboard all relevant teams and projects into the updated Framework and Checklist. When mitigation measures are needed, H&M Group would provide additional guidance and support to any teams working on AI products that would involve children as a direct or indirect target group. In the future, strategies may include an oversight body for AI and data ethics, and layered processes to reach out to key stakeholders more efficiently. This would raise awareness of the direct and indirect ways children could be affected by AI and ensure that risks related to children in AI contexts are identified, understood and mitigated in an ethical and timely way.

About this case study

This case study is part of [UNICEF's Artificial Intelligence for Children project](#), which aims to better understand how AI-powered technologies can protect, provide for and empower children. Through a partnership with the Government of Finland, the project developed a draft [Policy Guidance on AI for Children](#), which contains practical recommendations and principles for governments and industry to create child-centred AI policies and systems. In order to inform and improve future versions of the guidance and inspire others, organizations were selected to pilot the guidance and share their diverse experiences to illustrate how AI-based initiatives could be designed to be more child-centred. The approaches taken, lessons learned and insights gathered will be one contribution to the global effort towards AI policies and systems that support children's development. View all of the case studies on our [website](#).

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