



# Four Pillars of AI Governance

DataCamp Webinar

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# Mastercard's AI Governance: Building Trust in Technology

Andrew Reiskind: Chief Data Officer at Mastercard says: "**Responsible AI is a business imperative to ensure we build and sustain trust with all stakeholders who engage with our use of AI. At Mastercard, we are leading the way in developing and deploying AI practices to ensure our AI is transparent, fair, and effective.**"

Mastercard recognizes the transformative power of AI and is committed to harnessing it responsibly. Our robust AI Governance Program ensures that Mastercard uses, develops, or offers AI systems that are **reliable, fair, and transparent**. This program is built on four key pillars for Responsible AI (RAI):



DEFINE



ENSURE



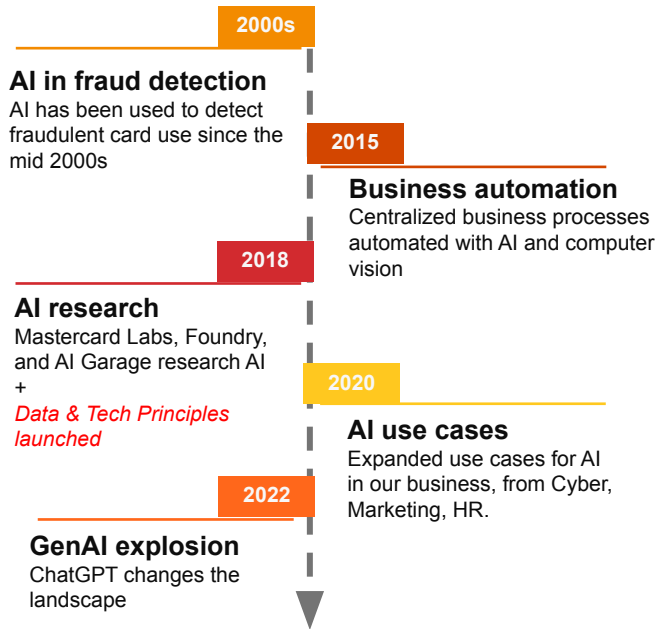
ENABLE



ADVANCE

# Mastercard leads in Responsible AI through the work of the AI Governance program

## 1 Mastercard has a history of AI governance



## 2 Our principles guide our AI work

### Mastercard's Data & Tech Responsibility Principles



Inclusion



Integrity



Innovation



Social impact



Security and privacy



Accountability



Transparency and control

## 3 Our promises to the individual

1. You own it.

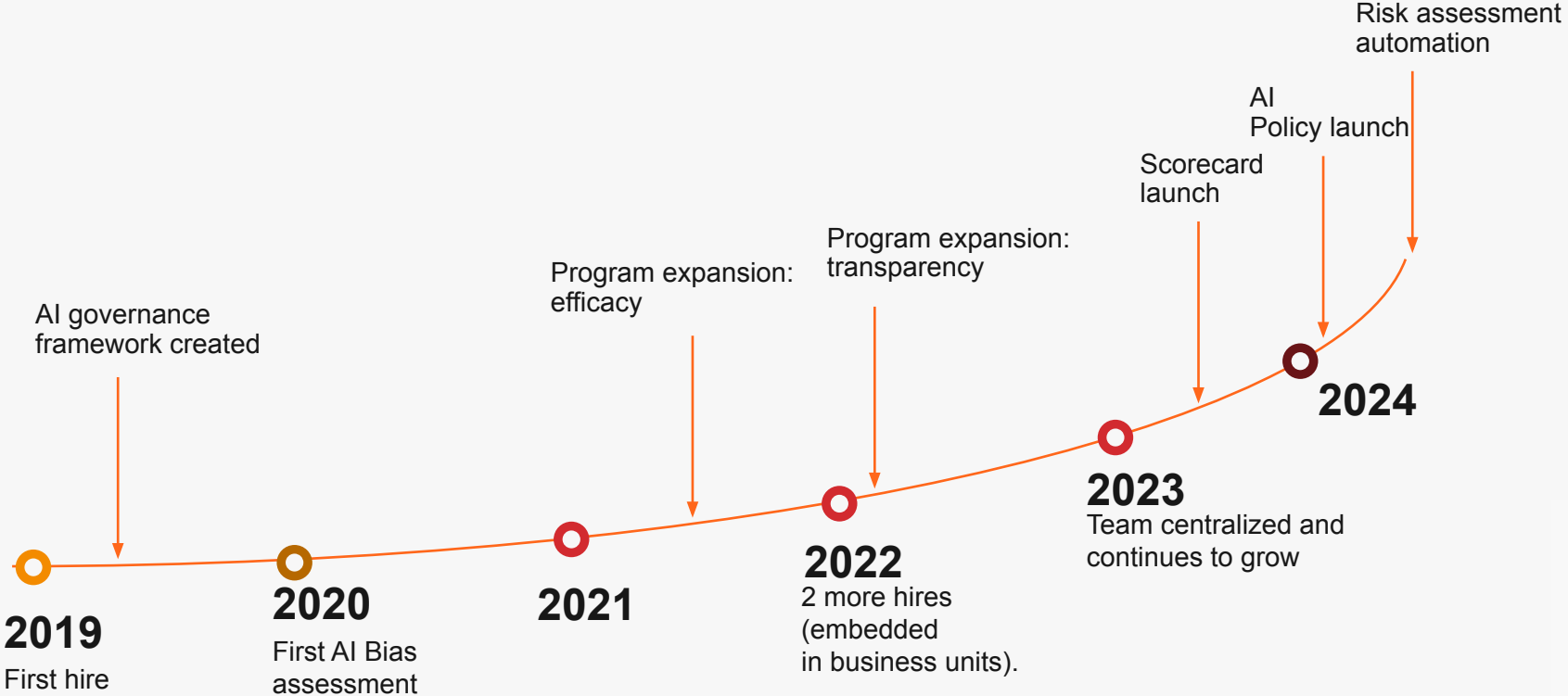
3. You should benefit from the use of it.

2. You control it.

4. We protect it.



Mastercard's AI Governance Program has grown since its origin in 2019



Mastercard's AI Governance Program is a robust program that operationalizes our principles



## Mastercard's AI Governance Program is a robust program that operationalizes our principles

### Mastercard's AI Governance Program

At Mastercard, we have set up a robust AI Governance Program focused on

DEFINE

ENSURE

ENABLE

ADVANCE

**Responsible AI.** This program enables Mastercard to address and mitigate AI risks, ensuring that all AI systems (both built and bought), that are being used, developed, deployed, or offered by Mastercard are reliable, fair, and transparent across all applications.





## 1. Define

- Establish **policies, standards, and guidance**
- Maintain **oversight** and inventory
- Facilitate **ongoing dialogue** and documentation



We launched enterprise AI policy as a **compliance and enablement program**



We distribute **guidance documentation and standards** that help stakeholders understand how to comply



Our **AI Governance framework** structures risk management into a set of simple processes



We **track and inventory** all AI use. We **report** on AI trends and opportunities to senior leadership and strategy leaders



We **escalate** noncompliance and residual risk to enterprise risk management, enable regulatory **disclosure** and inform **auditing**

II. Scorecard, which is the initial activity of Stage 1 of the AI Governance Review Process.

The DSL is responsible for preparing this documentation and sending it to the AI Governance team.

### STAGE 1: Ideation and Scoping

#### Screened and Evaluated

The initial stage of the AI Governance review process should occur development, consisting to Framing and Concept stages of the 5 essential mitigation requirements assigned to the organization's capabilities that the AI solution includes to manage its risks an model development. Performing a risk assessment prior to model redevelopment and that solutions are safe and robust from the start. The stage is initiated by completing the Scorecard, which assesses AI Solution to individuals, processes, or the organization. This score produces a points-based risk level classification, and acts as a trigger for subsequent check-ins and requirements, which can be:

- Development based: Third Party Assessment
- Technology based: Generative AI Assessment
- Data and Use Case based: AI Legal Review, Bias Assessment
- Risk Level based: Impact Assessment

Seite 1 - Initial Risk Assessment

Following Scorecard review, the AI Governance team will provide a Report that documents an AI solution's risk assessment in terms of safety and fairness risks, this acts as Gate of the first stage of the review report informs if the AI Solution is Approved, Approved with Conditions, Remediations, or Rejected, and provides risk mitigation requirements, recommendations that Product Owners or Data Science teams may identify risks and move forward with model building.

Note: Risk mitigation requirements informed by the Initial Risk Assessment for both internally developed models and externally procured AI Solutions.

### STAGE 3: Model Design and Validation

## AI Algorithmic Bias and Assessment: Quick Read

### What is Bias in AI?

Algorithmic bias is the result of systematic and repeatable errors in AI/ML solutions that create unfair outcomes in privileging one category\* over another in ways different from the intended function.<sup>1</sup> Notable examples of algorithmic outcomes favoring one group over another include: favoring male over female job applicants ([example link](#)), granting more loans to male-owned versus female-owned businesses with equivalent qualifications ([example link](#)), and bias in recidivism prediction ([example link](#)).

Bias can be introduced to solutions from the input (or training) data, and/or the method by which the AI solution (algorithm) was developed.

**Input data bias:** models are trained on input data that may reflect historical biases, and/or the dataset may suffer from sample selection (e.g., survivorship bias). Some population subsets may be better represented than others because, historically, we have had more information collected on those groups. For example, historical medical records are more comprehensive for wealthier white population than other demographics. When the data is not representative of the entire population, the model may learn more about the patterns in one group than the entire population. These biases in the input data are then perpetuated through the model when it is trained, and this leads to biased predictions since the model learns from patterns in the data.

**Biased algorithms:** Bias may also be introduced in model development. In development, data scientists select the datasets, methodologies, features (variables), and hyperparameters of the model. The feature selection process may reflect individual biases of the developer(s), for instance, when certain features are more prevalent in one group than another, or when the model assigns higher weights to certain features that are correlated with protected attributes.

Bias Assessment (or Testing) methodology is a shorthand reference to measurement of the bias present in both the input and the output of machine learning models.

### Why is Bias Testing Important?

Bias assessments are critical part of implementing Mastercard's [Data Responsibility Principles](#), which guide our AI Governance program, and prescribes a reasonable and

Subject	Issue Date	Last Revision Date	Policy No.
AI Governance Policy	2024	2024	XXXXXX

AI Governance Policy V1.0



Singapore 111111

Name: \_\_\_\_\_ (as defined in Policy Management Tools)

Time: 00:00





## 2. Ensure

- Implement a scalable assessment framework throughout the AI lifecycle
- Identify risks, implement controls, and monitor models
- Focus on efficacy, fairness, and transparency



Our team has developed a **suite of evidence collection artifacts** to assess risk



AI Governance reviewers issue formal reports that **contain guidance for product teams**

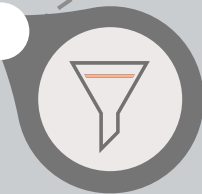
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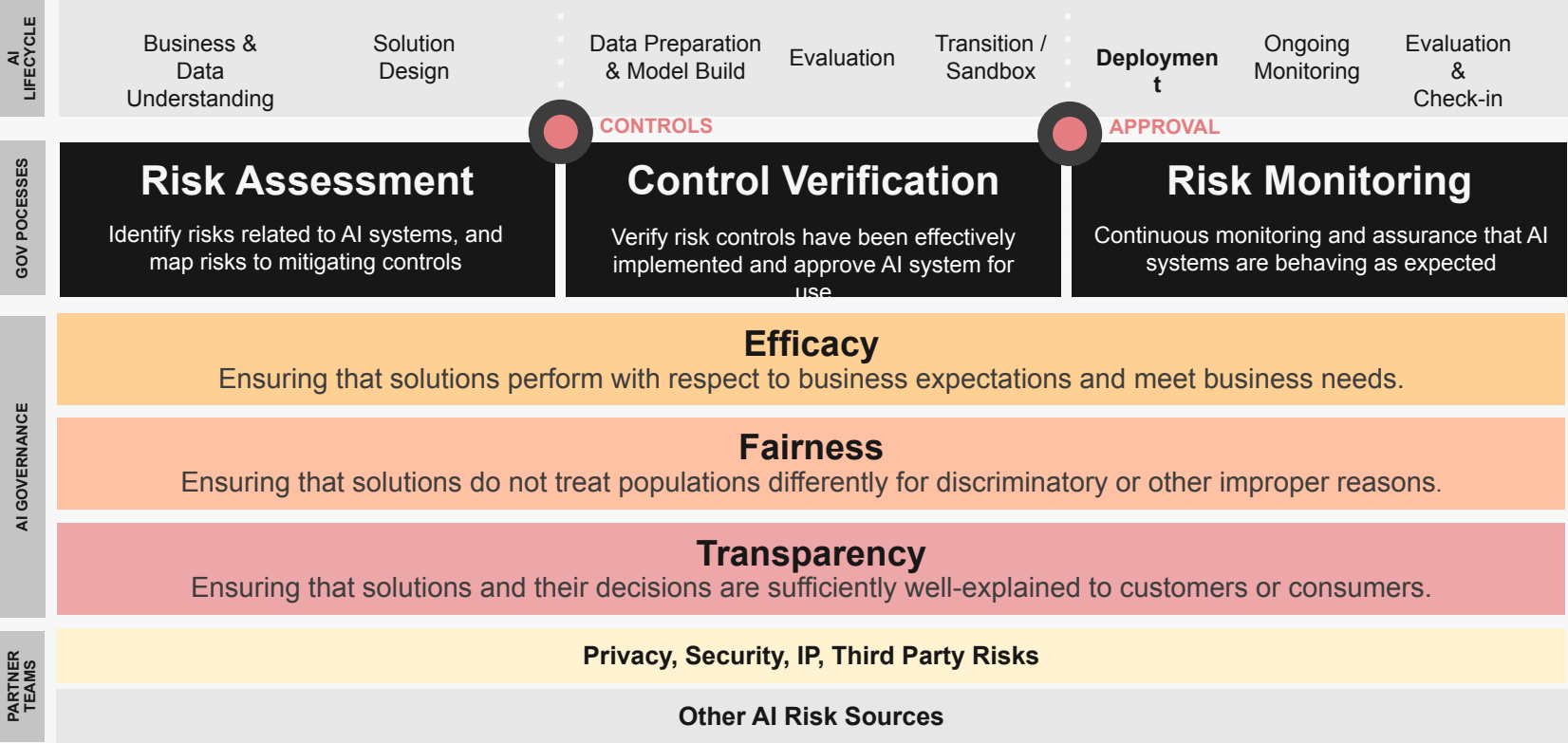
Our team's experts worked with tech teams on a **bias testing API**



We establish regular review cadence for products based on risk factors and regulatory requirements.



We distributed a model monitoring API and implemented automated alerting to **manage ongoing risk**





### 3. Enable

- Make things easier for our stakeholders
- Provide training and resources on RAI
- Collaborate continuously with partners on research, development, and tools



We have collaboratively pursued **co-development partnerships** teams across the company



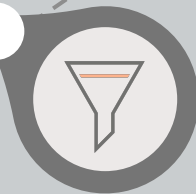
Working with others, we developed new **tools, methods, and processes** to make governance easier.



We created role-based **training** programs and general knowledge sharing



We created many ways to access information, including video content, **Quick Reads** and established regular office hours



# Mastercard's Bias Testing API helps make bias testing and mitigation easy

## 1 Readiness

Ensure teams are ready to test products that require testing, by establishing

- data
- metrics and thresholds
- suitable conceptual definitions

## 2 Assurance

Review all products for fairness risks, by:

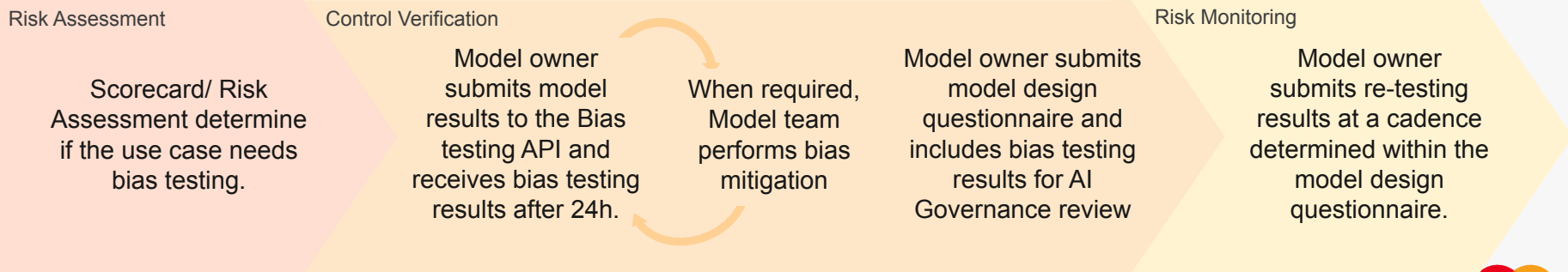
- identify products that require testing
- track products' tests
- report when teams don't test as required

## 3 Enablement

Support teams in testing, to increase the rate at which teams comply with test requirements. This includes providing them with tools, and guidance.



AI Governance partnered with internal development teams to create a Bias testing API, so teams can test their models often. The stages for testing and mitigating bias in Mastercard's AI solutions are:





## 4. Advance

- Promote research to solve tractable problems
- Partner with internal and external thought leaders
- Engage with policy, academia, and civil society



We standardized **model documentation** to bolster transparency and trust with customers



Our **model cards** are based on industry best practice & provide an external source of model information



We chair a centralized **RAI communications** working group that aligns messaging across Mastercard



Our team develops research, white papers, and thought leadership on RAI, both internally and with external research partners



Mastercard works on broad policy and regulatory support – public comments, policy meetings, and global events in RAI

## Moving from Recommendations to Assurance: Enabling AI while minimizing risks

- Supply chain management
- 3rd party risk management
- Business value alignment
- Moving away from point solutions toward enterprise strategy



- Open Source development
- Small and medium model performance with less features
- Market changes and vendor consolidation
- Emerging regulation

INTERNAL

EXTERNAL



# Mastercard's AI Governance team succeeds by fostering internal and external partnerships

**Development Partnerships**  
Creating tools for data scientists

**Research Partnerships**  
Creating new techniques and data

**Risk Partners**  
Creating and improving risk management

## Internal

- Partners in implementing **bias testing, model monitoring and bias mitigation methodologies.**
- Partners in developing tooling for **evidence collection and evaluation** of AI and GenAI systems

- Partners in developing and extending bias testing datasets to global scope.
- Partners in research and development into new AI fairness and transparency techniques.

- Privacy & Data Protection
- Corporate Security
- Legal
- Enterprise Risk Management

## External

