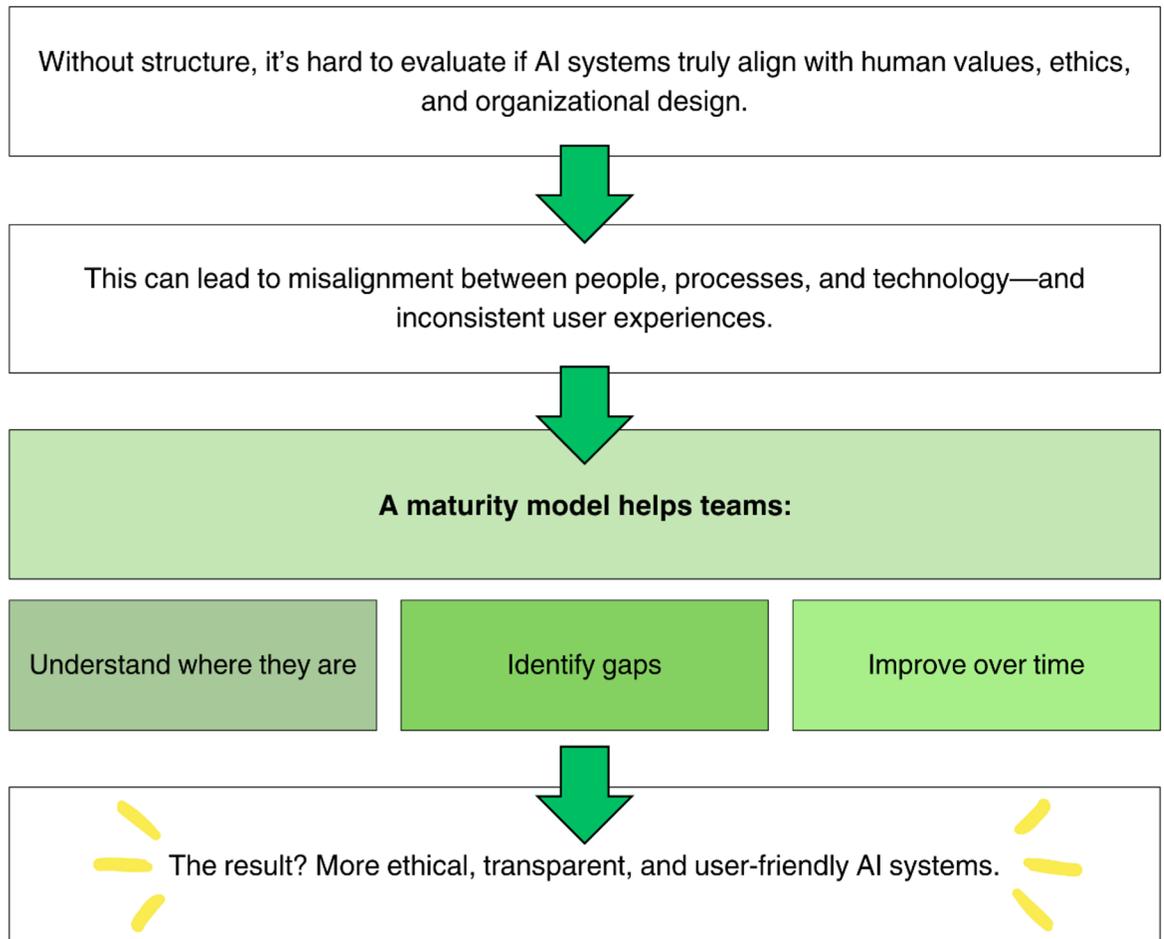# Human Centered AI

Maturity Model

Winby, S. & Xu, Wei, *Human-Centered AI Maturity Model: An Organizational Design Perspective,*
December 2025

WHY DO MATURITY MODELS MATTER?

Many organizations struggle with implementing Human-Centered AI (HCAI) because there's no clear roadmap or maturity model.

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Without structure, it's hard to evaluate if AI systems truly align with human values, ethics, and organizational design.

⬇

This can lead to misalignment between people, processes, and technology—and inconsistent user experiences.

⬇

A maturity model helps teams:

Understand where they are	Identify gaps	Improve over time

⬇

The result? More ethical, transparent, and user-friendly AI systems.

Sources: Deloitte (2020); Hartikainen, Väänänen, & Olsson (2023); Wilkens, Langholf, Ontruo, & Kluge (2012); Sonntag, Mehmann, & Teuteberg (2024)

WITHOUT A MATURITY MODEL ❌

❌ No clear roadmap for HCAI development

❌ Misalignment between people, processes, and technology

❌ Ethical risks and unclear accountability

❌ Inconsistent user experiences and trust issues

❌ Difficulty scaling or sustaining human-centered practices

Organizations struggle to operationalize HCAI without a structured path.

WITH A MATURITY MODEL ✅

✅ Provides a structured, step-by-step roadmap

✅ Aligns AI development with human values and org design

✅ Encourages ethical, explainable, and user-empowering AI

✅ Supports measurable improvement across teams and systems

✅ Builds trust, adoption, and long-term adaptability

A maturity model turns HCAI from a concept into a concrete, scalable strategy.

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HCAI –
MATURITY
MODEL STAGES

The HCAI Maturity Model provides a structured framework for organizations to assess where they are in their adoption of human-centered AI. Each level builds on the previous one, helping organizations transition from basic awareness to full integration of ethical, human-aligned AI systems.

01 Level 1: Initial	02 Level 2: Develop	03 Level 3: Defined	04 Level 4: Manage	05 Level 5: Optimize
Entry, sanction ad-hoc practices	Emerging frameworks & basic feedback	Structured practices & governance	Metrics, accountability, lifecycle adoption	Continuous innovation & industry leadership

Table 5 Overview

LEVEL 1: INITIAL

GETTING STARTED: AWARENESS & SANCTION

Organizations begin exploring HCAI concepts with limited structure. Most AI initiatives are technically focused, reactive, and lack user input.

01

01

02 03 04 05

KEY CHARACTERISTICS

- Ad-hoc Practices
- Minimal Awareness of HCAI
- No Formal User Engagement
- Reactive AI Development

ASSESSMENT CRITERIA

- Entry, sanction, and start-up underway
- No feedback loops in place
- Limited understanding of human impacts

OBJECTIVE

To complete the readiness assessment, build internal awareness and start identifying value of user involvement.

Table 5 Overview Slide 1/5

LEVEL 2: DEVELOP

LAYING THE FOUNDATION: ETHICS & EARLY FEEDBACK

Organizations begin experimenting with HCAI principles—adopting ethical frameworks, basic usability testing, and informal training.

02

01 02 03 04 05

KEY CHARACTERISTICS

- Early user interviews/surveys
- Usability testing for select projects
- Ad-hoc training on HCAI topics

ASSESSMENT CRITERIA

- Initial processes to gather feedback
- Some ethical considerations present

OBJECTIVE

To initiate research, use-case exploration and foster an early culture of HCAI learning. To build cross-functional awareness.

Table 5 Overview Slide 2/5

LEVEL 3: DEFINED

ESTABLISHING STRUCTURED HCAI PRACTICE

Human-centered AI becomes part of standard design and testing. Cross-functional teams, governance processes, and ethical design guidelines emerge.

03

01 02 **03** 04 05

KEY CHARACTERISTICS

- Ongoing user design lab sessions
- Formal review processes
- Proactive training, personas, journey maps

ASSESSMENT CRITERIA

- Standardized practices for usability, fairness, explainability
- Ethical review established

OBJECTIVE

To create stakeholder engagement processes and develop policies for human-AI alignment.

Table 5 Overview Slide 3/5

HCAI –MATURITY MODEL STAGES

L5 Continuous innovation & industry leadership. Objective is Lead best practices, optimize human-AI collaboration

L4 Metrics, accountability, lifecycle adoption to evaluate and institutionalize HCAI practices.

L3 Structured practices & governance in order to formalize HCAI interation and create guidelines.

L2 Emerging frameworks & basic feedback. Objective is to begin use-case development and HCAI training.

L1 Entry, sanction, ad-hoc practices to Complete readiness assessment and build awareness.

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