

intelligaia

CX Design and Innovation



Key Insights e-Book

Human Centered Artificial Intelligence

A futuristic world to prep for

Designing with Human-In-The-Loop

A Human-Centered approach to AI wins people's loyalty and ensures trust.

A constant across all industries is the rapid pace of digital adoption and the accelerated digital transformation in response to the pandemic. At the core of this transformation is an unobstructive customer-centric operating model and a data-driven approach to ensure that every customer interaction is relevant and contributes to business value. Customer-centric AI applications focus on intelligent segmentation, natural-language generation and content creation, next-best action, and the harmonization, measurement, and optimization of experiences across the customer journey.



Seems like a futuristic world that we really need to prep for making Deeper Human Connections using AI

Businesses today are building compelling AI based customer experience for their success. This is the reason why Tech and User Experience Leaders are researching and qualifying AI innovations to provide an intelligent, convenient and informed CX. AI has the power to analyze and process huge amounts of data from different sources like digital devices and sensors including human behaviors and emotions, thereby helping create intent based CX.



The term **Human-Centered Artificial Intelligence** is a recognition of the fact that the future is increasingly putting humans in contact with artificial intelligence.

AI can learn by itself and predict, suggest and automate tasks. The applications of AI are improving in the domains of major sectors working on nascent scenarios like Healthcare (Intelligent treatment plans, disease digital twins and recognition based diagnostics), E-commerce and Content creation (synthetic advertising), News (AI News), Social Media (Video Sentiment Analysis, Mass Conversation Intelligence).



Not just AI, but Human (advisor/supervisor) Centered AI

A human-centric approach to innovative AI solutions requires a deliberate focus on empathizing with people, crafting their future journeys and aligning their needs to business outcomes. Designing and developing AI systems without empathy leads to user resistance and lack of trust aka lack of adoption. Training, calibrating and incorporating AI-enabled systems requires human-in-the-loop architecture.

Application leaders must understand **the relationship between humans and algorithms** to improve speed, accuracy and risk compliance

For example, Natural-language generation is a form of AI that unlocks value by enabling marketing and customer-experience leaders to add objectivity and mathematical certainty to the effectiveness of the words used in every customer interaction.



There is a balance between automation and human interaction to be discovered in every situation.

According to a [study by Stanford University](#), the benefits include.

Significant gain in transparency



Each step that incorporates human interaction demands the system be designed to be understood by humans to take the next action and also having some human supervisor determining the critical steps.

Ultimately human and AI undertake the task alongside one another, making it harder for the process to remain hidden.

Incorporate human judgment in effective ways



Basically, AI systems are built to help humans. Humans-in-the-loop system puts humans in the decision loop.

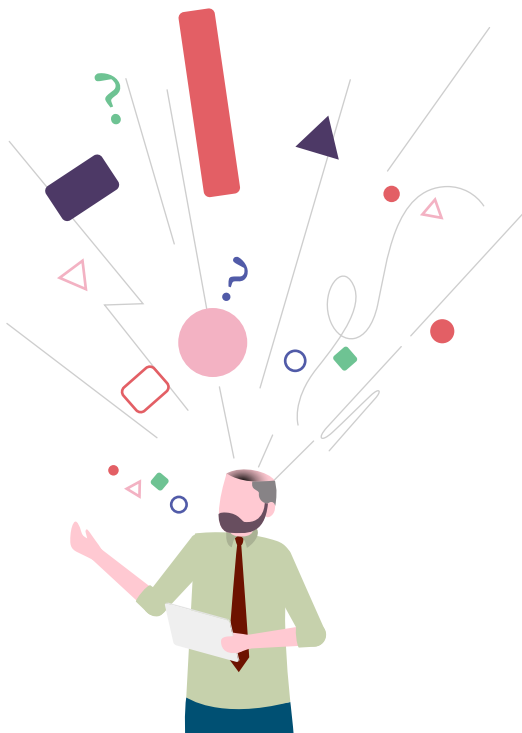
Shift pressure away from building “perfect” algorithm



Because the system is built around human guidance, the system only needs to make meaningful progress to the next interaction point.

By incorporating human intelligence, judgement, and interaction into the loop, the automated aspects of the system is exempted from “getting everything right all at once”

Often enables more powerful systems, not less



Human-in-the-loop design strategies can often improve the performance of the system compared to fully automated and fully manual systems. A critical first ingredient in designing any human-centered AI systems is having the awareness to ask:

- **At what junctures can human judgement and preferences improve the system in its effectiveness and the experience of using it?**
- **What might an interaction model or “user interface” look like?**
- **How does the AI model support such an interaction?**
- **What needs to be tweaked to make it work?**

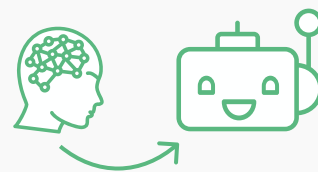
Cognitive Augmentation

AI excels when it augments human power and enhances business outcomes



Take me to the next level

Train me. Show me
the possibilities.



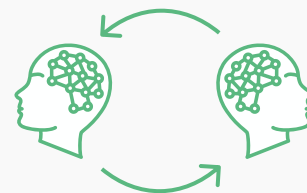
Go the last mile

Human in the loop.



Pass the Baton

It's your turn now.



Symbiosis

One cannot live
without another.

As more companies prioritize personalization, they are also looking to AI as a core part of the solution. The rise of AI-based hyper personalization uses customer information to tailor content, products, and services to a customer's wants and preferences. The key to leveraging these opportunities lies in data, and AI-driven applications have the capacity to mine terabytes worth of information in real time to elevate the customer experience. Ironic as it may seem, technology holds the key to building a more personal experience and inspiring the loyalty and trust that keeps customers coming back over and over again.

At every stage of the customer journey, businesses have an opportunity to meet and even exceed expectations.



Vodafone worked with Adobe to identify and predict customer segments and make them available for activation, and then used AI-based language to generate personalized messages for each segment, boosting customer conversions by 40%.

Improving the customer experience (CX) and thereby customer satisfaction, loyalty and advocacy that are important metrics of CX is a leading contender for investing in artificial intelligence(AI).

Using AI in ways that make people more successful is what we call human-centered AI. Improved, personalized experiences help organizations and their employees to recognize their customers, get to know them and anticipate their needs.

Building Ethical AI

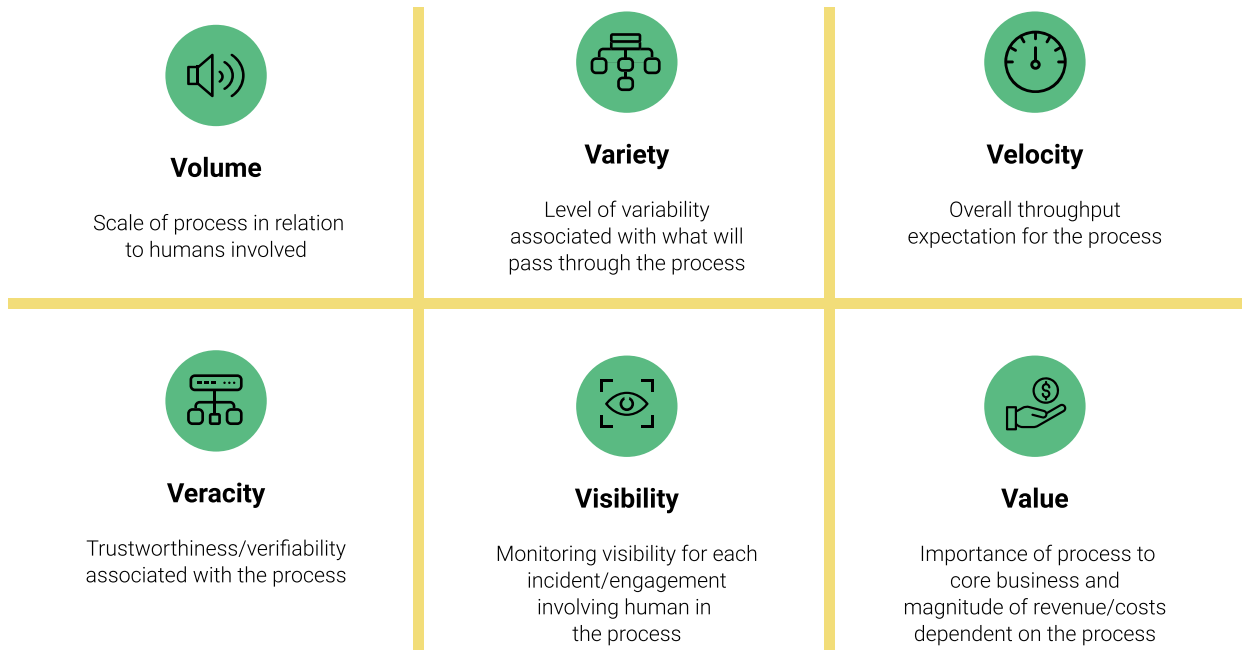
As discussions around the advancement of AI evolve, so do the concerns. Artificial intelligence (AI) limitations, social media platform growth and increasing content complexity have led social media platform providers to invest rapidly in the human workforce for content moderation demands. Organizations risk making the same AI ethics and human interest mistakes as their social media counterparts as they increasingly leverage human-in-the-loop AI for new business outcomes. So the question is how to leverage AI to improve human interest concerns?

Leaders seeking to leverage AI in support of critical business outcomes should:



Formalize organizational accountability for AI ethics on both business outcomes and human interests for human-in-the-loop processes.

Evaluate the disposition to overlook AI ethics and human interest concerns for a given process across six key dimensions:



Take a process-centric approach to identify and mitigate risks that are presented when humans and AI intersect. For example, Social Media Platforms need to primarily invest in AI to improve overall outcome centric concerns, such as content moderation throughput involving four key phases; prepublication, publication, post publication and republication.

There is a need for organizations, CX and industry leaders to start prioritizing ethics-minded “should we...” questions over technically-minded “can we...” questions as they embrace AI to drive business outcomes.

An augmented workforce is the key to success

AI is evolving rapidly to tap the market's unprecedented processing power, the economics of the cloud, vast amounts of data, commoditization of advanced analytics and faster network connectivity. As a result, AI is available more widely and cost-effectively than ever before and you can count on its adoption acceleration.

Human-centered AI, which focuses on augmenting the workforce to improve customer and employee experiences, can contribute directly to achieving business goals. Let's discuss an example here.

Following a typical AI approach, organizations may replace support agents with a chatbot or digital assistant to automate and streamline responses. But this can lead to "less-than-ideal customer experiences".



With a human-centered approach, AI technologies are used to augment the support agent to **identify the right information, find and expedite answers**, resulting in **better customer experiences**.

Improving Customer Experience using AI

Customer Experience is being continuously transformed by AI through a deeper understanding of customer behavior collecting data with Voice Of Customer initiative. Product Executives and Digital Transformation leaders are often tasked with using artificial intelligence (AI) and machine learning (ML) methods to improve the customer experience (CX). But the leaders face many challenges early on to demonstrate the value and maintain stakeholder buy-in.

Challenges

Suggestions

1. Mapping Personas and pain points

AI initiatives often struggle to deliver results that are substantial enough or at pace.

Action: List your business objectives aligned to your AI initiatives.

Tip: Ensure your AI initiatives are efficient and relevant to your business objectives.

2. Shaping Business Outcomes

Stakeholders lose confidence when there is no way to validate return on investment (ROI).

Action: Conduct A/B testing for specific initiatives.

Tip: Integrate ROI measurements into deployment strategies (for example allowing for A/B testing) to determine success.

3. Identifying Use Cases aligned to CX initiatives

Identify optimal use cases that align with and extend existing CX initiatives.

Action: List use cases prioritized on the basis of high friction.

Tip: Areas of High friction are where high volume touchpoints, pain points and high value transactions intersect.

Challenges


Suggestions

4. Defining meaningful customer journeys

Difficulty in attributing improvements to specific initiatives due to factors that can contribute to or detract from CX.

Action: Map AI initiatives with your existing CX initiatives.

Tip: These initiatives must have ways to validate return on investment.



“By 2023, 30% of customer service organizations will deliver proactive customer services by using AI-enabled process orchestration and continuous intelligence.”

~Gartner

What directions to take?

1. Map CX Challenges to AI Solutions

Improving customer experience is seen as a top motivator for planned AI/ML investments. Tackling areas of high friction early opens more ways to demonstrate ROI. Reduction in contact volume or complaints, increases in sales revenue and improvements in customer satisfaction Net Promoter Score (NPS) provides more metrics to draw on to measure success.

Organizations need a "Total Experience" (TX) strategy to ensure alignment to create transformative user experience and business value.



Total Experience contains the entire company experience – employee, customer, and user. It shows the company's activities from different sides and reveals the hindrances to fix them quickly.

Armed with fundamental capabilities like data unification, real time insights and business interaction, Human Centered AI plays an important role in **Total Experience strategy to help make informed decisions.**

The benefit of such a systematic approach includes

Spending less time convincing stakeholders on the value of established initiatives and shifting the focus to how you can extend those benefits using AI. Lead with Visuals and interactive Prototypes of high friction use cases.

Utilizing measures of success already in use will help you to assess the impact of the existing CX initiatives.

Organizations can take action to form “cross functional teams’ that understand the data used for AI/ML models. Very critical to showcase what we are imagining as user experience we’ve data, engineering capacity and talent to deliver it. Find the right design partner who has experience with enterprise needs.

Strategizing and aligning efforts from the ideation phase bridging the gap between CX strategy and reality.

Prioritizing/Optimizing the most impactful CX disruption that has a positive influence on customers and growth.

Moreover, organizations can leverage existing CX data expertise on the existence, accuracy, completeness and relevance of data from their domains making room for more informed and valued judgments on what to include and remove.

Reduce customer effort score that has a direct impact on customer loyalty, customer retention, reduced cost of service and higher CX Index.

Some top CX Priorities leading to AI Use Cases

Voice of Customer (VOC)

Tools like speech, text and social analytics can be used to unlock insights from vast data sets. Dedicated VOC suites are constantly adding AI enabled capabilities to their offerings.

Speech Analytics

Aimed at improving call handling skills, speech can improve VOC initiatives when used strategically. For example, helping to scope and size problems that call-logging can miss, providing sentiment analysis at scale and even giving organizations early indication of emerging trends that could be missed otherwise. At the core, text and social analytics use Natural Language Understanding (NLU) models to surface insights from unstructured content like open ended questions in surveys responses, emails, live chats or online posts.

Personalization

AI applications have a strong presence in this space. Personalized recommendations boost engagement as well as drive upsell and cross sell opportunities. Organizations looking to extend or augment personalization programs using AI should leverage first party data as much as possible, ensure strict compliance with relevant privacy regulations and keep check for any bias in the data.

Customer Journey Analytics

Customer Experience is about Relationships and Transactions. Customer Journey Mapping (CJM) often brings to light the gap between what businesses think their customers need and what they're actually looking for. It helps align the goals. One of the most important things to optimize the customer journey is to gather information about the customer (the more information the better) and continue to evolve by adding new touchpoints, channels and devices.

CJMs are key to make an organization Customer Centric, track and analyse the way customers and prospects move through multi channels and touchpoints to interact with organizations. These can be used to identify critical paths, segment customers as well as optimize and synthesize next best action strategies. A multi-experience approach ensures that all touchpoints of interaction with your business are consistent, and that customers can transition seamlessly between them. We do this by Identifying channels and devices, defining inter-app workflows, determining transition points and identifying shared concepts.



Read our ebook [Designing and Implementing Customer Centric Transformation across Multiple Touchpoints and Devices](#) to find out how multi experience design can accelerate your business.

The utilization of AI and Machine Learning to optimize data collection and performance are two key capabilities that can enable the true personalization of the digital customer journey.

Artificial intelligence can empower organizations to raise the bar for customer interactions throughout the customer journey.

2. Prioritize areas with high friction to maximize early returns

Most organizations have voluminous data aggregated by channels, products and services that can help gauge the high value transactions. Existing CX programs already have a priority list of known customer pain points. The highest point of friction emerges where these areas overlap. There are some good starting points for improving CX. Prioritizing use cases that check two or three of these starting points means benefits are compounded. Refer to [MVP in a week.](#)



Targeting higher volume touchpoints and channels



Transactions or interactions with high financial value/margins help persuade stakeholders and keep them on your side



Tackling the most common complaints

Dealing with areas of high friction opens up many ways to exhibit ROI. Reduction in support cases, increase in adoption which leads to bigger wallet share and improvements in customer satisfaction provides the metrics to measure success.

3. Integrate ROI measurements into deployment strategies

AI based systems are probabilistic in nature. Using AI to influence CX can sometimes have uncertain results. To strengthen a business case, conduct a pilot or proof of concept using a small group of users and measure against a control group. The results of the pilot can then be extended to a larger customer base as a compelling case for secure funding.

Business Execution using Design Principles for AI

These principles help organizations evaluate proposed AI applications with strategic intent to help achieve business results, not just operational improvements.

Design Principle

Anticipate the future

Strategic Implementation

AI generates insights that augment or automate decisions directly leading to business execution. A strategic AI application can produce granular insights into what customers, markets or other entities are likely to do in specific future situations and what the enterprise can do to influence them.

The more trustworthy the insights, the more enterprises will rely on them to guide future execution systems.

- *Some AI emergence/futuristic examples are Emotional Intelligence, Video Sentiment Analysis, Mass Conversation Intelligence, Real Time Conversation Intelligence, AI News, Synthetic Advertising, Recognition-based Diagnostics.*

Design Principle

Strategic Implementation

Act with little/no intervention

AI applications provide value by automating existing manual processes. A strategic AI application acts independently and operates without human direction. This produces significant productivity gains as it augments the work done by humans and frees them for more humane tasks.

A good example is AI that monitors human/system behaviors, recommends action and proactively assumes control to prevent mistakes or improve performance.

Its use can be seen in:

- *Video conference sentiment analysis by understanding the sentiment of attendees in video conferences based on speech and text input often in conjunction with computer vision. Acts as an enabler for more effective remote work, learning, collaboration, selling etc*
- *Medical use cases like robotic surgeries, recognition based diagnostics like speech patterns and mental illness, computer vision dermatology.*

Elevate the physical

Strategic AI applications can make a difference in the physical world by **enhancing the power of other enhanced technologies.**

- *Industries like aviation, construction, automatic visual inspection in manufacturing can greatly benefit from it making it reliable for optimizing product quality and leading to better ROI.*

Connect better with customers

To support digital business initiatives, AI applications must get as close to customers as possible. Digital product leaders should think about strategic AI applications that enable their organization to capture critical information to help build more intimate customer relationships over time through the entire journey of the person.

We can take the example of

- *Artificial Emotional Intelligence that employs NLP for real time advanced machine emotion detection for improved human understanding*
- *Mass Conversation Intelligence that uses AI analysis of conversations between large numbers of people to address, influence and improve behaviors. Example use cases include employee productivity, customer and market analysis, political influence, disaster response.*

Design Principle

Strategic Implementation

Uncover the invisible

Strategic AI applications can **make decisions much faster** than humans about **increasingly complex situations**.

- *For example, high-speed trading applications can already move money around in nanoseconds. This enables organizations to execute millions of orders in a matter of seconds, giving them a huge advantage.*
- *AI news enabling automated mining, collecting, analysing and generating news stories helps with speed and scale of information flows especially multi lingual.*

Manage risk

Privacy, security and risk form the biggest obstacles to the development of AI applications and are even more of an issue when AI applications serve a strategic business purpose. Any overlook doesn't just disrupt operations, it harms the brand or the enterprise. There is a need to define behavior limits.

- *With advanced analytical capabilities, AI can augment human-led risk management activities to drive better outcomes much faster. Banks, insurance companies, asset managers are starting to rethink how they approach financial risk management.*
- *An example here is supporting risk management and behavior limits into model operations by tracking a healthcare/insurance seeker's journey.*

Designing with Purpose: Putting People First

The design responds to needs—needs that exist, or will exist. As human-centered practitioners, we have a tremendous opportunity to shape a more humanist and inclusive world in sync with AI, and it starts by remembering our roots: finding and addressing real human needs, upholding human values, and designing for augmentation, not automation.



Instead of thinking of automation as the elimination of human involvement from a task, what if we imagined it as a selective inclusion of human participation?

The result would be an approach that harnesses the efficiency of intelligent automation while remaining open to human response, all while retaining a greater sense of meaning. The human-in-the-loop architecture does this by incorporating useful, meaningful human interaction into the system.

A question that product designers need to often ponder is whether AI can solve a particular problem in a unique way?

The answer is mostly yes with the caution that AI isn't a universal solution but when done right can improve an experience by offering people new kinds of predictive information, personalized services, or even a deeper understanding of their own needs.

For designers, this technology glimmers with opportunity. If you start with people then any exploration, product design, or research you do will have a fruitful path.

With AI, new relationships will need to be established between customer and product. These interactions will act as just the beginning of the ongoing conversation between business and consumer about what artificial intelligence can, and should be able to do for products and services.

Design will bring the necessary empathetic context for innovation, which is how a business will succeed with AI.



[Download our Implementation Guide for Dialog Creation](#) to create more natural conversational flows and improve the customer experience.

How ready is your business for AI?

Organizations considering AI technologies to help them achieve digital transformation should understand that the technical components that represent AI are only a portion of the solution. There is a larger context associated with how humans will interact with the system.

As organizations design digital experiences that are smart, fast, and helpful, they should center their design thinking around the human experience, and touchpoints with the solution.

Intelligaia can help organizations seeking to utilize artificial intelligence begin with a design thinking approach, put ideas to work that will rely on AI to help productivity, automate processes, engage customers and create new ways of doing business.

[Team up with us](#) to know how design can empower a more effective, human-centered implementation of AI.

We can Partner with you in myriad of ways

ACCELERATE
your Digital Transformation Efforts

MVP in a Week Workshop

M T W T F

Test and de-risk ideas
A step by step framework to fix, grow or reinvent digital transformation initiatives

[Workshop with us →](#)

AUGMENT
your Digital Transformation Team

Discovery and Design
UI Design, Design System, Prototype

Frontend Development
React/Angular/Mobile App Development

Engineering Services
Backend Development on Node.js, Java and more

Design or Development Partner
Taking on responsibility for an entire phase, by partnering with organizational experts

[Partner with us on either phase →](#)

AMPLIFY
your CX Transformation Initiatives

Ideation-to-Pilot-to-Launch
Partnering with your organization from idea to launch and maintain

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