AI for Sustainability
Bluebolt Ideathon 2024

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All about “AI FOR SUSTAINABILITY”

This starter kit is everything you need to participate in the “AI for Sustainability” Ideathon 2024 on Bluebolt.

Objective

This Ideathon aims to encourage associates to generate innovative, creative ideas and tech solutions that could help our clients and Cognizant reduce emissions, track net zero progress and/or lower delivery costs.

The starter kit provides context and understanding of the identified challenges and provides tools and resources from Challenge Sponsors to help you jump-start your solutions for the 2024 ‘AI for Sustainability’ Bluebolt Ideathon.

For the purposes of this starter kit, refer to the definitions below.

- **Stakeholder groups** refer to the direct beneficiaries of solutions generated – clients and Cognizant.
- **Challenge Sponsors** refers to the teams that service the above stakeholder groups and are responsible for the identified challenges and evaluating the solutions generated.

Themes refer to the specific sustainability-related area addressed/improved through Ideathon. Make the most of this kit. Accept the challenge and stand a chance to get featured on our Be.Cognizant page, LinkedIn and for the winning entries, also claim Cheer Points and an opportunity to build a prototype!

Why should you participate?

1) **Channel your passion for transforming climate action into real solutions.**

   We know you care for our planet. Over 44,000 of you have voluntarily completed the climate education course, and 6,000 of you have volunteered for climate and biodiversity-focused Outreach projects in 2023. This Ideathon is the perfect opportunity to go one step closer to real impact - use your core skills to make a positive impact through innovation and collaboration.

2) **Shape the future with clients.**

   Clients are the biggest and most influential global organisations and most of them have climate action on their agenda. With increasing awareness of environmental issues and stringent regulations, businesses worldwide are actively seeking innovative ways to reduce their carbon footprint and enhance sustainability. Our clients are no exception; they're looking to us for cutting-edge solutions to address their sustainability challenges while staying ahead in their industries.

This gives all of us a good opportunity to impact the planet through solutions that help our clients accelerate on their climate goals. The market for sustainable solutions is a rapidly growing opportunity.

3) **Opportunity to hone and highlight your AI/Gen AI skills.**

4) This Ideathon is not just about solving big challenges – it's also about personal growth and development. – Through this ideathon you are highly likely improve knowledge and skills in three areas:
   a. **Technology**: AI/Gen AI or other technology skills
   b. **Domain**: Climate/ Sustainability
   c. **Human-centred skills**: Collaboration, design thinking, problem-solving

5) Whether you're a seasoned pro or just getting started, this is your chance to level up your skills and make a real impact on the future.

Summary of Challenges

Theme	Clients' Sustainability	Cognizant Sustainability
WHY?	*Address our clients' pressing climate and sustainability challenges.*	*Bring speed and efficiency to Cognizant's Net Zero goals.*
Stakeholder Group	Cognizant Clients	Cognizant
Challenge Sponsor	Cognizant Sustainability Business	Cognizant Environment Team
Challenge 1	Supply chain traceability	Emissions working from home
Challenge 2	Green IT	Emissions from Commuting
Challenge 3	Circularity & resource conservation	Sustainability in office
Suggested Theme-Specific skill courses	Climate Education [2 hrs] Generative AI Client Offerings [1 hr]	Climate Education [2 hrs] Fundamentals of Gen AI [1.5hrs]

INSTRUCTIONS

Participation Guidelines:

Who can participate?
All Cognizant associates

1. Individual
2. Teams (Maximum team size: 5)

Ideathon Registration Link: CLICK HERE

How to register?

1. Register here.
2. Click here to see how to register and next steps - [This document contains all required information to help you navigate through the Bluebolt platform for a participant role].

Submission Format:

All entries MUST be submitted in the Ideation questionnaire which will appear upon clicking the 'Post an idea' button on the Bluebolt platform.

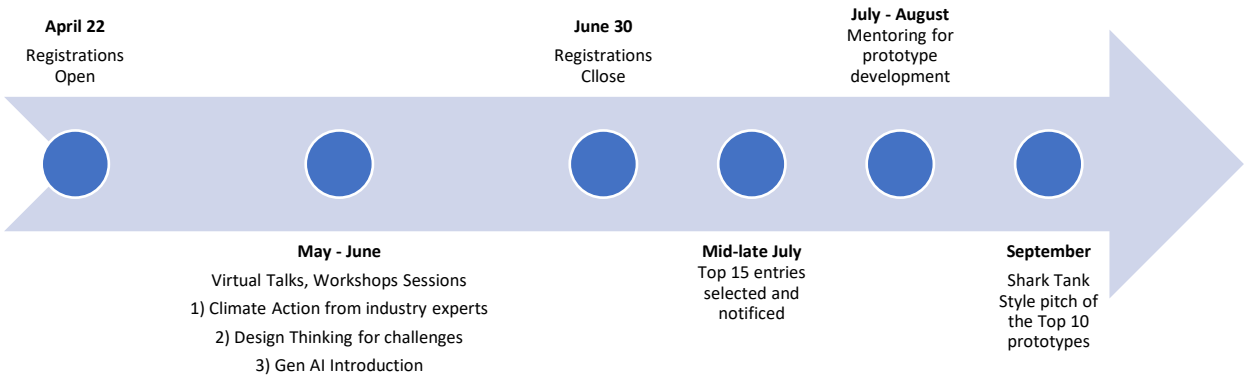
In addition to these answers, you can also upload PPT/ PDF documents using the 'Upload documents' option in the questionnaire (PFB screenshot), to be able to add picture/video illustrations to convey your ideas better. **Note: File size cannot exceed 25MB**.

Deadline for Idea Submission: June 30th

Quick Tip: Take the Climate Education course to equip yourself with the right skills to take up the challenges and ideate AI powered, sustainability based solutions.

What to expect next after submitting your solution?

Timelines



Note: Upon Registering for the Ideathon, you will receive timely-updates & calendar-list for Design Thinking Workshops and SME Talk sessions.

How will your idea be evaluated?

Your solution for the ideation is captured in responses to a questionnaire. The questionnaire is designed to be simple and easy to input. Some of the questions are mandatory and some are optional. Do note, however, that providing more detail in the optional/non-mandatory segments can help us better determine the value of your solutions.

In this section, we provide more clarity on some of the questions you will encounter.

1] Contributing towards UN SDG's [Refer Q 3]

Share which UN Sustainable Development Goals are most impacted through your solution. For clarity, please refer United Nation's Sustainable Development Goals (SDGs)
Example:

- Let's suppose you're planning on developing a Smart Lighting Management Platform, a solution which focuses on optimizing lighting energy usage in buildings (imagine office buildings, large hotel chains, malls, etc) to reduce costs and environmental impact. This idea aligns with 'SDG 7: Affordable and Clean Energy - Promoting Energy Consumption Reduction'.
- We selected SDG 7 because our solution focuses on optimizing energy usage and reducing consumption, aligning with the goal of ensuring access to affordable, dependable, sustainable, and modern energy for all.

2] Selecting Impact Indicators and Describing your approach to achieving them [Refer Qs 5&6]

Your idea will be evaluated on the below:

1. A relevant choice of impact indicator, with regards to your chosen problem statement.
2. A clear and concise outline/description of your process to achieve the goal.
3. Bonus: You can go the extra mile by mentioning the type of tech equipment/software that will work most efficiently to aid your solution model.

Example:

- The impact indicator most appropriate for this project would be - Energy consumption reduction (Units saved in kWh/MWh/GWh)

- Our solution entails developing a Smart Lighting Management Platform (SLMP) that utilizes AI algorithms to analyse energy usage patterns in real-time. SLMP will identify areas of inefficiency and recommend strategies for reducing energy consumption and implementation of smart lighting controls. What does smart lighting controls exactly mean? It's an automated control of lighting levels, schedules, and settings based on factors such as occupancy, daylight availability, and user preferences.

- Smart lighting control systems use sensors to detect occupancy in a room. When no occupants are present, the lights can automatically dim or turn off to save energy. As soon as someone enters the room, the lights brighten up again. Or think of using sensors to measure the amount of natural daylight entering a space, dimming or turning off lights in areas with sufficient natural light to maximize energy savings.

3] Quantifying your Impact [Refer Qs 6]

Provide a basic quantifiable framework for measuring the outcomes and impact of the solution, supported by relevant data. Your solution will be evaluated on the basis of the overall approach and factors considered towards quantification.
Please note: Don't worry about accuracy of numbers at this stage. We can finetune later.

Example:
[Note: You can use below steps to chart your quantifying framework, for any solution]

- **Baseline Assessment:**
  Start by collecting data on current energy consumption. For our example, let's say – 10 kWh per day is the total electricity consumption of a hotel room, with existing systems.

- **Identify Opportunities:**
  Evaluate the energy usage patterns and identify opportunities for efficiency improvements. For us, this may include upgrading to energy-efficient appliances and equipment. By implementing smart lighting & considering average occupancy, daily usage can be reduced to suppose 5kWh/day.

- **Implement Measures and calculate how much energy could be saved:**
  To measure the electricity saved after implementing a smart lighting system, we can do a post-installation measurement, wherein after the smart lighting system has been operational for a similar period as the baseline measurement, measure the electricity consumption again using the same method as before.

Calculations:

- Daily Saving in Electricity Consumption: 10 kWh (regular) – 5 kWh (smart) = 5 kWh

- Now, to find the percentage saving in electricity consumption:
  Percentage Saving in Electricity Consumption per Day: (Daily saving / Total daily consumption) * 100.
  = (5 kWh/10 kWh) * 100 = 50%

- So, the percentage saving in electricity consumption is 50% per day.

4] Highlighting your Unique proposition [Refer Qs 7]

Clearly articulate the distinctive benefits and advantages of the solution compared to existing alternatives, highlighting its innovation and differentiation in the market.

Example:

- SLMP distinguishes itself by offering personalized energy-saving recommendations tailored to each client's specific usage patterns and operational needs.
- Additionally, our solution can be seamlessly integrated with existing building management systems.

5] Dependencies & Risks [Refer Qs 8]

Ideas will be evaluated based on stating the possible challenges, roadblocks, or even risks, which might be encountered on the path to implementing the solution in real life.

Bonus: Plot the degree of severity of these factors with appropriate reasoning.

Example:

Key dependencies for successfully deploying a SEMP could include access to high-quality energy data, cooperation from building owners and facility managers, and regulatory support for energy efficiency initiatives.

6] Estimating Cost of Implementation [Refer Qs 9 & 10]

Present an elementary approach to calculating the approximate implementation cost of the idea, considering factors such as materials, labor, technology, etc. Tip: Mention the scale of impact and calculate the cost accordingly.

Example:
We're considering the scale of the SLMP installation for one hotel building with 10 rooms. The estimated cost for building and piloting the MVP of SLMP is $17,500.

Breakdown:
Assess requirements: $500.
Determine the scope and features needed.
Evaluate existing infrastructure for compatibility.

Product selection: $5,000
Research and choose smart lighting products.
Consider quality, reliability, and scalability.

Labor and materials: $10,000
Estimate installation labor and wiring costs.
Factor in materials like bulbs, switches, and sensors.

Integration and contingency: $2,000
Include integration with existing systems.
Set aside a contingency for unforeseen expenses.
Total Estimated Cost: $17,500

THEME 1: CLIENTS' SUSTAINABILITY

WHY?

Cognizant offers Sustainability advisory services to our clients to help navigate modern business challenges while staying eco-friendly. As companies aim for carbon neutrality or even carbon negativity, turning these goals into real plans becomes crucial. Leaders are eager to find quick wins in areas like energy use, waste reduction, or product redesign, but time and resources are limited.

Challenge 1: Supply chain traceability

Context

Today's supply chains are intricate, spanning continents and involving numerous stakeholders. Businesses can make informed purchasing decision only if they can trace product's origin and know its environmental impact. For instance, in the fashion industry, companies like Adidas and Patagonia are leveraging blockchain technology to trace the origins of their products and ensure ethical sourcing practices. A few critical issues currently faced by this industry are:

- Labor exploitation and unethical sourcing practices can persist unchecked, highlighting the importance of transparency and accountability.
- Inefficiencies and unclear sourcing practices can lead to wasted energy and materials.
- Heavy paper usage in supply chain records contributes to deforestation and slows down processes. By transitioning to digital records and blockchain technology, companies can streamline operations and reduce their environmental footprint.

Challenge Statement

How can Cognizant effectively integrate generative AI-driven solutions to streamline supply chain traceability processes, minimizing dependence on imprecise conventional methods, particularly focusing on enhancing efficiency and accuracy in monitoring goods and services across complex global supply chains?

Remember

- Consider all parties involved – suppliers, manufacturers, distributors, retailers, and consumers.
- Account for ethical implications of AI in the supply chain. How can we ensure data privacy and responsible use of AI?

Resources

Supply Chain Visibility: Traceability, Transparency, and Mapping Explained | Blog | Sustainable Business Network and Consultancy | BSR
Supply Chain Traceability: A Comprehensive Guide (rfgen.com)
Sustainability and traceability will be a future competitive advantage | EY Denmark

Challenge 2: Green IT

Context

IT infrastructures worldwide consume a lot of energy and resources. The usual ways we manage IT aren't very eco-friendly. Cognizant wants to change that – by using advanced AI to create a greener future. For example, data centers play a crucial role in Green IT. Some ideas to make them more efficient include:

- Setting up separate areas for hot and cold temperatures.
- Turning off and getting rid of zombie servers, which use up energy without doing any real work.

Here are a few more things to think about:

- Green IT infrastructure: Think of it like a living system. It runs on renewable energy, has smart cooling systems, uses servers efficiently, and finds eco-friendly ways to get rid of old equipment. And it's all managed by powerful AI.
- Green Software: AI helps make software more efficient, so it uses less energy when it runs. It also finds ways to make code cleaner and suggests ways to write programs that are better for the environment. Making software user-friendly and designing it smartly are big focuses in today's business world.

Challenge Statement

How can Cognizant implement AI-driven strategies to optimize energy consumption, enhance resource efficiency, and promote sustainability within IT infrastructures, focusing specifically on green IT infrastructure and software solutions?

Remember

- **Focus on Measurable Impact**
  Prioritize solutions that can demonstrate a quantifiable reduction in environmental impact like energy, water consumption & e-waste generation.
- **Green AI Development**
  Design AI algorithms that are themselves energy-efficient and environmentally friendly.

Resources

- Everything You Need to Know About Green IT in 2023 (greenly.earth)
- What is green software? - DCD (datacenterdynamics.com)
- What Is Green IT? Definition and Benefits (serverwatch.com)

Challenge 3: Circularity and Resource Conservation through AI

Context

An ideal circular economy does not deplete resources, minimizes waste and build longer shelf-life products. This describes a model that moves away from the traditional "take-make-dispose" approach. At Cognizant, we strive to maximize resource use, reduce waste, and prolong product lifecycles on behalf of our clients.

Example: Packaging redesigns can be a significant growth opportunity for a business. Times have changed. When products are shipped and sold via new eCommerce channels, they don't require the same anti-theft and fancy packaging as in the old days. Requirements for these products are shifting, making this is a great moment to take the leap and launch a better solution.

For many businesses, a packaging redesign can even be a cost-saving exercise. The re-use of containers, lighter materials, and fewer steps in production can lead to financial gains. When margins are under pressure, a packaging redesign exercise can help.

Following are a few pointers for your reference:

- **Resource Scarcity:** Earth possesses finite resources, and traditional linear economic models are pushing the planet towards depletion. Leverage AI to identify and manage resources more efficiently.
- **Waste Management:** Global waste generation is a critical issue. AI can help us recycle better, predict when we'll make too much trash, and find ways to make less waste in the first place.
- **Product Lifecycle:** With AI, we can track a product from the moment it's made to when it's thrown away. This helps our clients make smart choices about what they use and how they make things.

Challenge Statement

Provide AI powered solutions for instilling practices of optimum resource management & conservation and Circularity in industries. You may choose to ideate solutions specific to a particular industry/area of work of your choice.

Remember

- **Collaboration is Key:** Building a circular economy requires collaboration between businesses, policymakers, and consumers. AI can facilitate communication, data sharing, and joint innovation efforts.
- **Responsible Production:** As with any technology, ethical considerations around AI use in a circular economy are important. Ensuring transparency, fairness, and environmental responsibility in AI development and deployment is necessary.

Resources

- Artificial intelligence and the circular economy: AI as a tool to accelerate the transition | McKinsey
- How AI Will Accelerate the Circular Economy (hbr.org)
- The Impact of Artificial Intelligence in Driving a Circular Economy | by economic donut | Medium

THEME 2: COGNIZANT SUSTAINABILITY

WHY?

Cognizant has set of goal of ensuring Net Zero greenhouse gas emissions. This entails reducing our total emissions by 50% by 2030 and 90% by 2040. Decarbonizing our business while it continues to grow presents a difficult challenge that requires commitment, creativity, and innovation. Everyone in the organization can contribute either through changing and modelling new behaviours and/or devising novel solutions, including through technology, for reducing our consumption and emissions.

As a starting point, we want to ensure that all associates have a basic understanding of climate change - why it's a problem and what we can do about it – by undertaking one hour of climate training. Once you have taken the please attempt this challenge.

Challenge 1: Emissions from Working from Home

Context

Emissions generated by associates working remotely at home count towards Cognizant's overall carbon footprint. We want to ensure we reduce these emissions over time. Unlike office working, Cognizant has less control over electricity consumption in the home. The use of technologies for energy efficiency or behavioural changes that associates could make can be the next big step towards progress.

Challenge Statement

What ways can associate practice to work in less electricity consumptive ways?

Remember

Areas to consider for emission reductions include:

- Electricity consumed for heating, ventilation, air conditioning, cooling and lighting.
- Electricity consumed by appliances and IT equipment.
- Whether electricity comes from renewable sources

Challenge 2: Emissions from commuting

Context

Our associates around the world travel to work in many ways. The vast majority continue to use petrol or diesel-powered transportation which generates considerable emissions that count towards our company's carbon footprint.

Challenge Statement

What ways can be employed to optimize the way associates travel to and from work to minimize emissions?

Remember

Areas to consider for emission reductions include.

- Use of public or private transport
- Type of private transport used.
- Whether journeys are shared with other associates

Challenge 3: Sustainability in the office

Context

Our offices around the world generate emissions and waste. Associates have a role to play in helping minimize this. The challenge is to ensure we reduce unnecessary consumption of electricity and natural resources. This can be addressed through a mixture of behavioural change and modern technologies.

Challenge Statement

What ways of working can be implemented in our offices to minimize environmental and climate impacts?

Remember

Areas to consider for reduction include:

- Electricity consumed for heating, ventilation, air conditioning, cooling and lighting.
- Electricity consumed by IT equipment.

Resources

How to contact us?

For any queries, please email **outreach@cognizant.com** with the Subject Line: “AI for Sustainability - *Your specific query title*”.

Volunteering Credit

All participants shall receive volunteering credit upon submitting a solution on the Bluebolt platform.

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