BLUEMISSION AA
Building a coordination hub to support the mission implementation in the Atlantic and Arctic Basin

Acceptance Readiness Level

The Acceptance Readiness Level (ARL) framework evaluates how well a new technology or product is likely to be accepted by society. Its purpose is to systematically examine potential ethical, social, and legal concerns that could impact acceptance. This section provides a structured checklist of questions designed to assess the product's societal alignment; these should be addressed sequentially to guide the readiness evaluation. When any question is answered positively, it indicates the currently achieved level of readiness. Companies are advised to consider these aspects early in the conceptualization phase to mitigate potential acceptance issues in later stages of development.

	ARL: Acceptance Readiness Level	
Stage 5: Sustain		
Stage 4: Commercialize		
Stage 3: Develop & Test		
Stage 2: Prototype		
Stage 1: Conceptualize	6	Check if use and the production of the product socially is accepted in general
	5	Check if use of product is seen as questionable within marginal interest groups
	4	Check if product is seen as questionable by a key actors in the sector
	3	Check if product is seen as questionable among groups of the population
	2	Check if product is controversial among large part of the population
	1	Check if product is seen as illegitimate or socially unacceptable

This project has received funding from the European Union's Horizon Europe Research and Innovation programme under Grant Agreement number 101093962.

Acceptance Readiness Level

Stage 1: Conceptualize

Step 1: Is the product seen as illegitimate or socially unacceptable?

The first step in evaluating acceptance readiness is to assess if the product may be seen as illegitimate or socially unacceptable. This includes reviewing legal compliance, societal acceptance, and ethics to identify concerns early and adjust development strategies if needed.

HOW TO

1. **Check for Legal Compliance**:

   Ensure the product complies with laws and regulations across regions by consulting legal experts, reviewing standards, and aligning with consumer protection, environmental, and safety requirements.

2. **Assess Public Safety and Health Risks**:

   Evaluate potential health or safety hazards associated with the product. Products that might harm users, animals, or the environment could face strong opposition, so conduct risk assessments to ensure compliance with health standards.

3. **Evaluate Ethical Practices**:

   Examine the product's association with ethical issues like labor practices, sourcing, and environmental impact. Ethical missteps, such as exploitative labor practices, discrimination, or environmental harm, can result in social rejection.

4. **Analyze Potential Societal Impact**:

   Consider the wider societal effects of the product by assessing its environmental, social, and behavioral implications. A product perceived as harmful to community values or contributing to environmental degradation can be deemed unacceptable.

EXAMPLE

A company developing an innovative marine restoration technology, like an artificial reef, ensures compliance with environmental regulations and marine protection laws. The team assesses ecosystem impacts, potential risks to marine life, and ethical considerations, ensuring materials are environmentally safe. By consulting local communities, including fishermen and conservation groups, the company addresses societal perceptions, making the product socially acceptable and aligned with conservation goals.

Step 2: Is the product controversial among large part of the population?

To determine if a product is perceived as controversial, companies must assess public sentiment and identify any significant disagreements surrounding the product. A controversial product typically generates significant debate or contention, often linked to ethical, social, or political issues. This approach helps the organization navigate the complexities of public perception, ensuring that they are well-prepared to address any controversies before advancing the product further in the development process.

HOW TO

1. **Conduct Public Opinion Research**:

   Utilize surveys, focus groups, or interviews to gauge the public's perception of the product. Explore potential divides in opinion among different demographics, such as age, location, or socioeconomic status.

2. **Engage with Stakeholders**:

   Involve stakeholders, including customers, community groups, and industry experts, in discussions about the product. Collect qualitative feedback to identify concerns or support, which can shed light on the product's controversial aspects.

3. **Monitor Media Coverage**:

   Analyze media articles, blogs, and social media platforms to track public discourse about the product. Look for patterns in reporting or discussion that indicate significant controversy or disagreement.

4. **Identify Ethical, Social, or Political Concerns**:

   Assess if the product raises ethical dilemmas or social issues that could lead to controversy. Consider factors such as environmental impact, health risks, or potential for misuse, as these can influence public acceptance.

EXAMPLE

A marine restoration initiative, aimed at deploying artificial reefs to enhance fish populations, faces controversy among different stakeholder groups. Environmental activists' express concerns about the potential ecological impact of artificial structures disrupting natural habitats. Conversely, local fishing communities support the initiative for its potential to boost fish stocks, leading to economic benefits. Conducting public opinion surveys reveals a split in support, with younger populations leaning toward environmental protection while older demographics prioritize economic gains. This nuanced understanding highlights the controversial nature of the initiative, necessitating further dialogue and adjustments to align with broader societal values.

Step 3: Is the product seen as questionable among groups of the population?

The next step is to analyze whether the product is viewed as questionable among certain segments of the population. While controversial products evoke strong disagreements, questionable products raise doubts or ethical concerns about their legitimacy without necessarily sparking widespread debate. Companies can leverage insights from the previous step to address this issue. This assessment enables the company to address specific doubts, adjust messaging, and possibly refine the product formulation before further development, ensuring that the product aligns with ethical standards and community expectations.

HOW TO

1. **Review Feedback from Stakeholders**:

   Analyze comments and concerns raised by stakeholders during previous engagement sessions. This feedback can provide insight into specific doubts regarding the product's legitimacy or ethical implications.

2. **Conduct Targeted Surveys**:

   Deploy surveys focused on specific population groups that may harbor skepticism. Include questions that gauge perceptions of the product's ethics, safety, or environmental impact.

3. **Analyze Case Studies**:

   Study similar products or technologies that have faced questions about their legitimacy. Learning from their experiences can help identify potential pitfalls and inform strategies to address skepticism.

4. **Monitor Regulatory and Media Discussions**:

   Keep an eye on regulatory debates and media coverage surrounding the product category. Emerging concerns or scrutiny in these areas can indicate that the product may be viewed as questionable.

EXAMPLE

A marine restoration initiative, aimed at deploying artificial reefs to enhance fish populations, A new marine biopesticide designed to control invasive species faces scrutiny among environmental advocacy groups. While some stakeholders appreciate its innovative approach, others question its long-term ecological impact and potential harm to non-target species. To gauge skepticism, the company conducts targeted surveys among marine ecologists and local fishing communities. The findings reveal concerns about the biopesticide's safety and effectiveness, particularly regarding its effects on the delicate balance of the marine ecosystem.

SURVEY QUESTIONS

1. **Product Effectiveness:**
   - How effective do you believe the biopesticide will be in controlling invasive species?
   - What concerns do you have regarding the effectiveness of this product compared to traditional methods?
2. **Environmental Impact:**
   - Are you concerned about the potential impact of this biopesticide on non-target species?
   - What are your thoughts on the long-term ecological effects of using this product in marine environments?
3. **Health and Safety:**
   - Do you feel that the biopesticide poses any risks to human health or safety?
   - How informed do you feel about the safety measures associated with the use of this product?
4. **Ethical Considerations:**
   - Do you believe that the development of this product aligns with ethical standards in environmental protection?
   - What ethical concerns do you have regarding the use of biopesticides in natural ecosystems?
5. **Regulatory Approval:**
   - How confident are you in the regulatory processes that govern the approval of this biopesticide?
   - Do you think more rigorous testing should be conducted before this product is widely adopted?
6. **Community Engagement:**
   - Do you feel that local communities were adequately consulted during the product's development?
   - How important is it for companies to engage with community stakeholders regarding the use of such products?
7. **General Sentiment:**
   - Overall, how would you rate your acceptance of the new marine biopesticide on a scale of 1 to 10?
   - What factors would influence your willingness to support or oppose the use of this biopesticide in your community?

Step 4: Is the product seen as questionable by key actors in the sector?

In this step, companies must analyze whether their product is viewed as questionable by influential actors in the relevant sector. Key stakeholders in marine industries may include port authorities, shipping and shipbuilding companies, offshore energy firms, marine research and education institutions, and government agencies, including multilateral organizations like the United Nations Environment Programme (UNEP) and the International Union for Conservation of Nature (IUCN). Their perspectives can significantly influence the product's acceptance and market viability. This approach ensures that the product not only meets regulatory standards but also aligns with the expectations and values of key actors in the marine sector, increasing the likelihood of successful market adoption.

HOW TO

1. **Engage with Key Stakeholders**:

   Facilitate discussions with industry leaders, regulatory bodies, and environmental organizations to gather their insights. Their feedback can highlight any concerns related to its legitimacy or suitability for marine environments.

2. **Conduct Expert Interviews**:

   Interview experts from relevant sectors to assess their views on the product. Understanding their concerns or reservations can provide critical information on the product's perceived legitimacy.

3. **Utilize Industry Forums and Conferences**:

   Participate in industry-specific forums, conferences, and workshops to understand prevailing attitudes towards the product. These venues can serve as platforms for networking and obtaining informal feedback from key players.

4. **Monitor Regulatory and Policy Developments**:

   Stay updated on regulatory changes and policy discussions that may affect the product. Key actors often have insights into upcoming regulations that could render a product questionable.

EXAMPLE

A company developing an innovative biodegradable material for marine habitat restoration initiatives seeks validation from key actors in the marine industry. This material is designed to provide structural support for coral reefs and other marine ecosystems while minimizing environmental impact. The company engages with marine research institutions, restoration NGOs, and government agencies to discuss the material's effectiveness and potential benefits for marine restoration projects.
Through interviews and consultations, the company discovers that while many stakeholders appreciate the material's sustainable properties, concerns arise regarding its long-term stability and effects on marine organisms. By recognizing these concerns early, the company can refine its product, ensuring it meets the expectations of key actors involved in marine restoration. Collaborating with marine biologists and restoration practitioners, they conduct further studies to demonstrate the material's compatibility with marine ecosystems, thereby enhancing credibility and addressing any skepticism from influential stakeholders.

INTERVIEW QUESTIONS

1. **Product Understanding**
   - How familiar are you with biodegradable materials used in marine restoration?
   - What are your first impressions of this product's potential for marine habitats?
2. **Perceived Benefits**
   - How do you see this material contributing to marine restoration?
   - Which features of the product seem most beneficial for ecosystems?
3. **Concerns and Questions**
   - Do you have any concerns about long-term effects in marine environments?
   - What performance criteria should this material meet in marine applications?
4. **Regulatory and Compliance Issues**
   - How do you view its compliance with marine environmental regulations?
   - What guidelines or standards do you think should be in place for materials used in marine restoration?
5. **Collaboration and Support**
   - Would you collaborate on studies or projects on real-world testing of this material?
   - What resources or support would you need to facilitate the implementation of this product in your projects?
6. **Market Potential**
   - How do you perceive the market demand for biodegradable materials in the marine sector?
   - What factors influence the adoption of sustainable materials in marine restoration practices?
7. **Feedback for Improvement**
   - What improvements or modifications would you suggest for this product?
   - Are there additional characteristics or functions that are crucial for enhancing the material's effectiveness?
8. **Impact Measurement**
   - How would you measure the ecological impact of using this biodegradable material?
   - What metrics do you consider important for evaluating the success of marine restoration initiatives involving new materials?

Step 5: Is the use of the product seen as questionable within marginal interest groups?

In this step, companies evaluate whether the product is viewed as questionable by marginal interest groups, who often raise concerns outside mainstream viewpoints. While these groups may represent a small segment of society, they can exert significant influence on public perception, especially in areas related to ethics, sustainability, and social responsibility. To assess this, companies can employ similar methods used in previous steps, such as targeted engagement and sentiment analysis, with an emphasis on understanding specific concerns raised by these niche groups.

HOW TO

1. **Identify Relevant Marginal Interest Groups**:

   Start by listing groups with interests that might uniquely intersect with the product. For marine restoration, this could include advocacy organizations for rare or local marine species, small coastal community groups, or eco-tourism advocates focused on preserving fragile marine ecosystems.

2. **Engage with Group Representatives**:

   Connect with these groups to understand their concerns. This may involve conducting interviews, focus groups, or even attending public meetings they organize.

3. **Monitor Social Media and Public Discourse**:

   Track platforms where these groups are active to gauge sentiment and identify emerging concerns. Look for recurring themes or questions that reflect specific hesitations about the product.

4. **Adjust Communication and Product Strategy**:

   Based on findings, consider ways to address these concerns, whether through adjustments in product design, enhanced transparency, or public education.

EXAMPLE

A company introducing an artificial substrate for coral restoration receives feedback from a niche coastal community organization concerned about potential impacts on local biodiversity. The group fears that introducing artificial structures may alter native species' natural habitats. To address these concerns, the company organizes a community forum, allowing scientists to present evidence of the substrate's benefits for biodiversity. By addressing these niche concerns directly, the company not only improves acceptance among this marginal group but also strengthens its public reputation for transparency and environmental consideration.

Step 6: Is the use and the production of the product socially not accepted in general?

The final step evaluates whether the overall use and production of a product align with broad societal norms and ethical standards. Social acceptance in this context refers to a product's alignment with safety, environmental sustainability, and positive societal impact. Products generally achieve high social acceptance when they are perceived to contribute positively to society without causing harm to people or the environment. In cases where these norms are not met, companies may need to adjust production processes, improve transparency, or redesign the product to meet societal expectations.

HOW TO

1. **Evaluate Societal Norms and Values**:

   Review the product's alignment with broad societal norms around safety, environmental sustainability, and ethics. Consider if the production process and materials are viewed as responsible and acceptable to general public sentiment.

2. **Use Technology Acceptance Model (TAM) or User Acceptance Testing (UAT) if Applicable**:

   - For technology or software products, use TAM to understand perceived usefulness and ease of use. TAM provides insights into whether users see the product as valuable and accessible, both essential elements for social acceptance.
   - For software products, UAT can be applied to assess the product's suitability and reception, identifying any usability concerns or social objections early in the testing phase. conduct. Incorporating feedback from UAT helps adjust the product to meet societal expectations.

3. **Assess Broader Impact**:

   Analyze the environmental, social, and economic impacts of the product to determine if there are potential objections. Addressing these issues proactively can enhance societal acceptance.

EXAMPLE

A company developing a marine restoration technology for coastal ecosystems may conduct stakeholder outreach to determine if any production processes raise social concerns, such as the impact on local communities or marine habitats. By integrating feedback from TAM and UAT, the company identifies specific elements that stakeholders appreciate, such as the product's sustainability and minimal ecological footprint. This validation allows the company to proceed confidently, knowing the product aligns with societal expectations.


2024