

IAMC ASSESSMENT

Innovative Approaches for the Sound Management of Chemicals and Chemical Waste



for consultants

The objective of this IAMC approach is to support manufacturers and industrial users of chemicals in using innovation to **improve their sustainable management of chemicals while simultaneously improving business performance.**



This means:

- Improving overall business productivity and generating value for customers
- Improving resource productivity (chemicals, water, energy & other materials)
- Reducing pollution intensity, especially chemical waste
- Improving health and safety of society and the environment by reducing accident risk and preventing exposure to chemicals with adverse acute or chronic impacts
- Eliminating hazardous chemicals/processes or substituting safer and more economically feasible ones
- Substituting chemicals based on non-renewable resources with those based on renewable resources

Outputs of the innovation assessment:

- *Overview of the product portfolio and company's business strategy for growth*
- *The most important chemicals management hotspots inside the company and along the value chain (e.g. use and end of life stages)*
- *Unmet needs in the value chain that offer potential for new business opportunities for the company*
- *Root causes of chemicals management hotspots*
- *Prioritised options to be implemented*
- *Implementation and monitoring plans*
- *Review of implemented options*
- *Programme for continuous improvement*



This can be achieved through identifying **chemicals management hotspots** and the **unmet needs** of direct customers and end markets (in the context of hotspots):

INNOVATION =



$f(x) =$

Chemicals management hotspots

The hotspot can cause one or several important economic, social and environmental impacts. Hotspots can be at a company and/or across a chemical product's value chain.

An example hotspot could be lead in paint which causes many health and environmental impacts over the paint's value chain.

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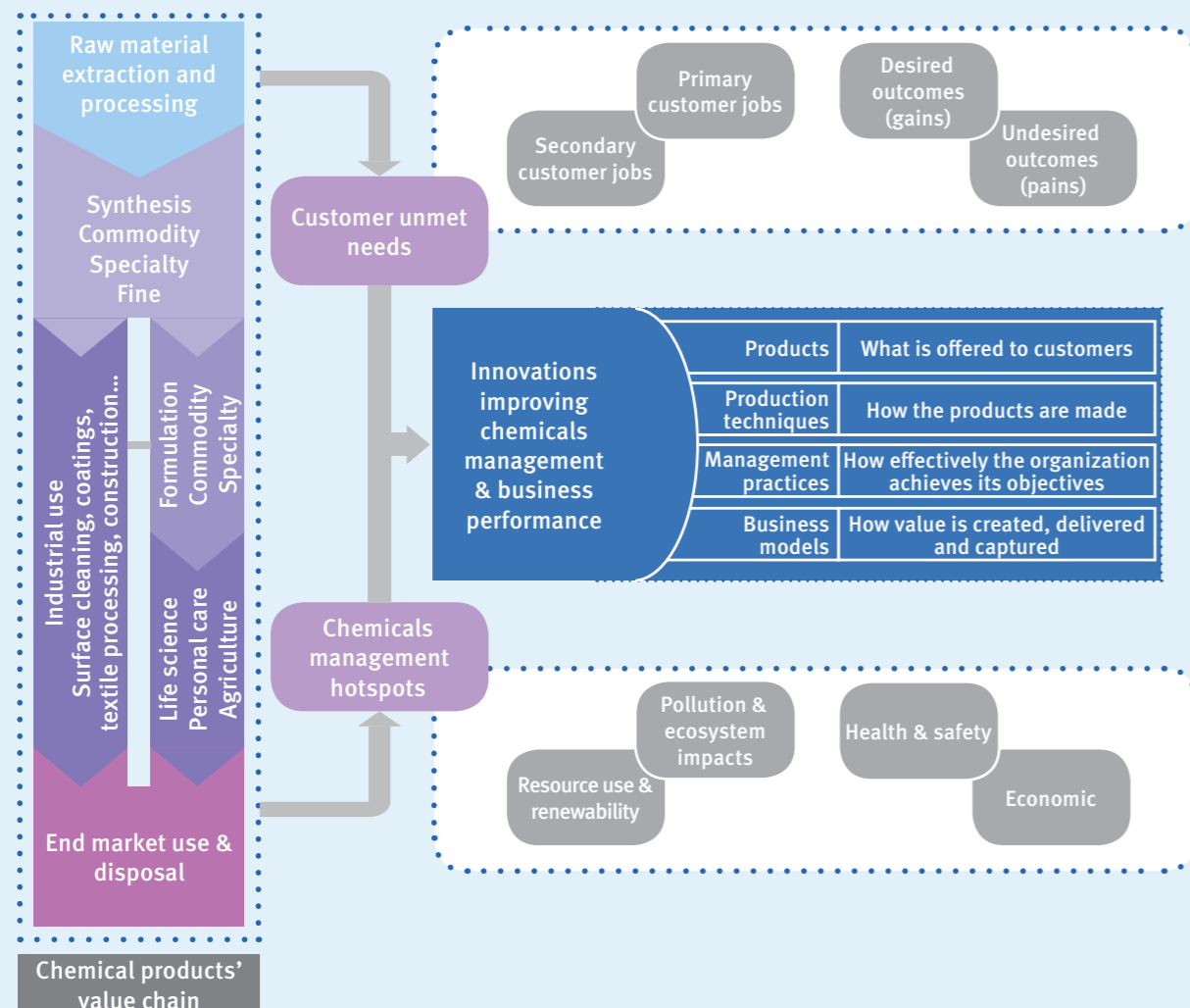
Customer unmet needs

The unmet need is unexplored potential. It is a business need that is important to the customer and is not being met or fully satisfied by the current products being offered or made available.

The company can use the unmet needs in the value chain to address sustainability concerns and increase business performance through targeted innovations.



The methodological approach applied to the companies involved in synthesis, formulation or industrial usage of chemicals is presented below:



The approach is composed of the following steps:

- Map the company’s chemical products’ value chain
- Identify & characterize chemicals management hotspots having impacts in the following sustainability areas: a) resource use & availability, b) pollution & ecosystem impacts, c) health & safety, d) economic.
- Identify & characterize the “jobs to be done” in the value chain which create value. Also identify the most important business “pains and gains” in the value chain. The ones not being currently met or properly serviced are defined as ‘unmet needs’
- Use the value chain unmet needs to generate innovations that will improve the chemicals management hotspots and at the same time create value for the company. Innovations for improving chemicals management performance along the value chain can be categorised as: products, production techniques, management practices, and business models.

The information in the innovation assessment is to be filled out by the consultant, not the company. Once filled in, sections of the report can be provided to the company for confirmation. It is of course possible for a company to use the template for their own internal purposes.



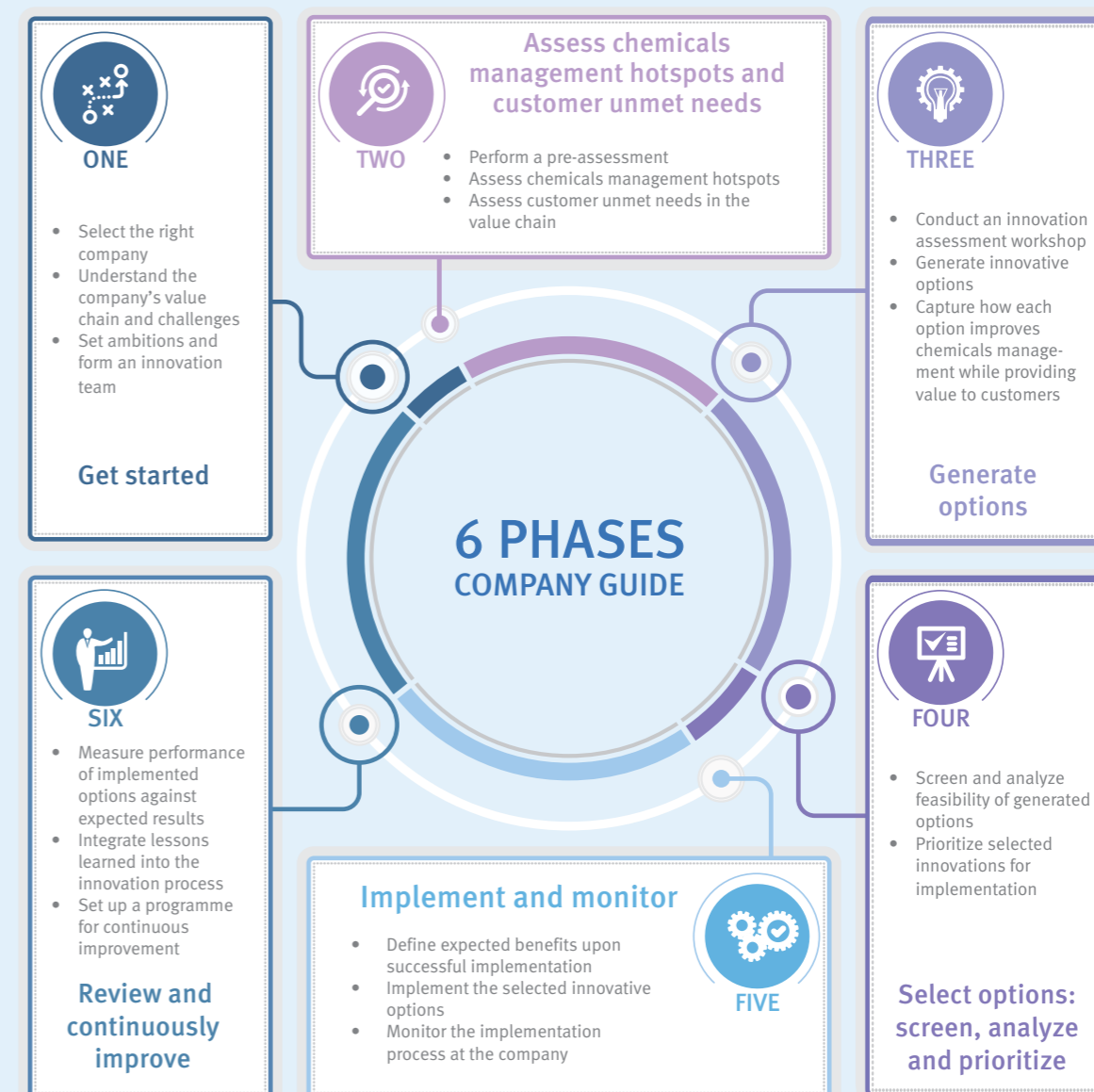
The following points are recommended for getting important information:

- Focus on getting information required to generate the main outputs of the innovation assessment (product portfolio and growth strategy; chemicals management hotspots inside and outside the company; unmet customer needs in the value chain). Make sure the information is specific enough to be actionable.

• Minimise the time invested by the companies. First perform desktop research before contacting the company. In particular:

- » Product portfolio: this information is usually on their website if they have it. If not, ask for a brochure or any other information they have. Summarise the information for their confirmation.
- » Information on the production process: research first and then try to identify any chemicals of concern used in the process.
- » Information on the chemicals management impacts: typically the company will only know its own impacts and maybe those of its customers. You will need to do more desktop research here.
- » Arrange a site visit to: a) confirm existing information, b) fill in important missing information. It might be helpful to bring a questionnaire with you to get the information.

The structure of the report follows the methodology used in the IAMC toolkit. Refer to the IAMC toolkit for additional guidance and technical information.





Structure of the assessment report

Methodological phase

Comment

A. Innovation assessment summary

1 Introduction to the project

2 Getting started

- 2.1 Description of company XYZ's value chain
 - 2.1.1 Company product portfolio overview
 - 2.1.2 Overview of trends affecting the company's business
 - 2.1.3 Company strategy for growth
- 2.2 Company XYZ's experience with operational excellence, sustainability & innovation (optional)
 - 2.2.1 Experience with operational excellence
 - 2.2.2 Experience with sustainability
 - 2.2.3 Experience with innovation
 - 2.2.4 Summary
- 2.3 Ambitions and innovation team

3 Assessment of chemicals management hotspots

- 3.1 Map of the main chemicals management impacts at the company
 - 3.1.1 Summary of chemicals of concern
 - 3.1.2 Description of production processes
 - 3.1.3 Summary of resource use and productivity
 - 3.1.4 Summary of main waste impacts
- 3.2 Map of chemicals management impacts over the product's value chain
- 3.3 Chemicals management hotspots

4 Assessment of customer unmet needs

- 4.1 Overview of customer segments (this is optional)
- 4.2 Value proposition canvas (this is optional)

5 Generation of innovative options

- 5.1 Option generation
 - 5.1.1 Cause analysis and search for potential solutions
- 5.2 Capture options

6 Selection of options

- 6.1 Screen options
- 6.2 Analyse options
 - 6.2.1 Quick analysis of directly selected options
 - 6.2.2 In-depth analysis of workable options
- 6.3 Prioritise and schedule options

7 Implementation & monitoring

- 7.1 Implementation action plans
 - 7.1.1 Implementation action plan for option X: option name
 - 7.1.2 Implementation action plan for option X: option name
- 7.2 On-going monitoring

8 Review & continuous improvement

- 8.1 Review of results and lessons learned
 - 8.1.1 Review of implemented options
 - 8.1.2 Recommendations to improve innovation management
- 8.2 Continuous improvement programme

Provide the necessary background information on the company in order to understand how the company provides value to its customers

Identify and describe the chemicals management hotspots across the value chain with high impacts on human health and the environment. Propose activities that should be considered for continuous improvement

Select the most important product offerings (goods & services mix), and describe the unmet needs for the direct customer and end customer segments

Generate and capture innovative options to improve chemicals management and fulfil customer needs in the value chain

Screen and group generated options into: "directly selected", "workable", "rejected"; analyse and prioritise for implementation

Define the benefits expected from implementing the option. Compare the implementation results to the expected benefits to measure the progress & to learn how to improve.

After implementing options, ask:

- How do the achieved results compare to the target results?
- What did you learn during the option implementation?