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ISO 14001:2015

Getting a management perspective on life cycles

Whitepaper

Introduction

There's nothing particularly new about the idea of a product or service having a 'life cycle' in environmental terms. What is new, however, is its direct incorporation into the latest version of ISO 14001. For those with environmental responsibilities, it raises many questions. What are the implications? What if I don't own a key part of the cycle? How detailed does my perspective have to be and how do I get one? If you've pondered any of these questions, or you're beginning to think it might be a good idea if you did, this whitepaper explores what is meant by a 'life cycle perspective' and what it can mean for you and your organization.

Perspective vs. Assessment

One of the first questions asked is 'How detailed do you have to be to make the life cycle exercise effective?'

The good news is that the inclusion of life cycles in ISO 14001:2015 doesn't mean an intricate and heavily detailed analysis. The standard even goes so far as stating in Annex A that a detailed life cycle assessment is not required **"…. thinking carefully about the life cycle stages that can be controlled or influenced by the organization is sufficient ".**

It calls this lower level approach taking a life cycle 'perspective' rather than an 'assessment' and the difference is an important one.

One of the differences is the extent of an organization's 'control' or 'influence' over the various life cycle stages and how that extent will be a crucial factor in the breadth of the perspective considering the whole cycle. Thinking about the practical limits of where an organization can directly control matters, where it can influence them and where that influence begins to have little or no effect will certainly force clarity on the scope of the exercise and on the environmental management system (EMS).

Even though the standard is clearly steering organizations away from a detailed life cycle assessment in the initial stages, the top level exercise like the one being promoted can still reap benefits (for example, new design possibilities, energy savings, synergies in the supply chain). Any more detailed follow-up analysis, however, is in the hands of the organization itself and can't be 'demanded' by an auditor or driven by an external certification body.

To have a perspective implies viewing something from a singular point. Therefore taking a perspective on a life cycle means viewing the entire life cycle from the position that you or your organization has within that cycle and capturing the unique properties of such a view.

Finally, the whole point of a cycle is that it repeats itself, otherwise it is not cyclical. No two cycles repeat themselves in exactly the same way or result in the same outcome. Life cycles of similar products might look the same on the surface, but underneath, the environmental impacts could vary widely.

The real key to unlocking the benefits of taking a life cycle perspective lies in how it enhances the various parts of your existing EMS. These benefits are less reliant on the level of detail, but hinge more on the sensible use of the information generated. More data may not mean more information.

To understand how this might work in practice, we need to look in more detail at how life cycle thinking can affect individual elements of your existing EMS and the most obvious initial point of impact on an EMS is in the steps required to establish an organization's operating and commercial context.

Process notes

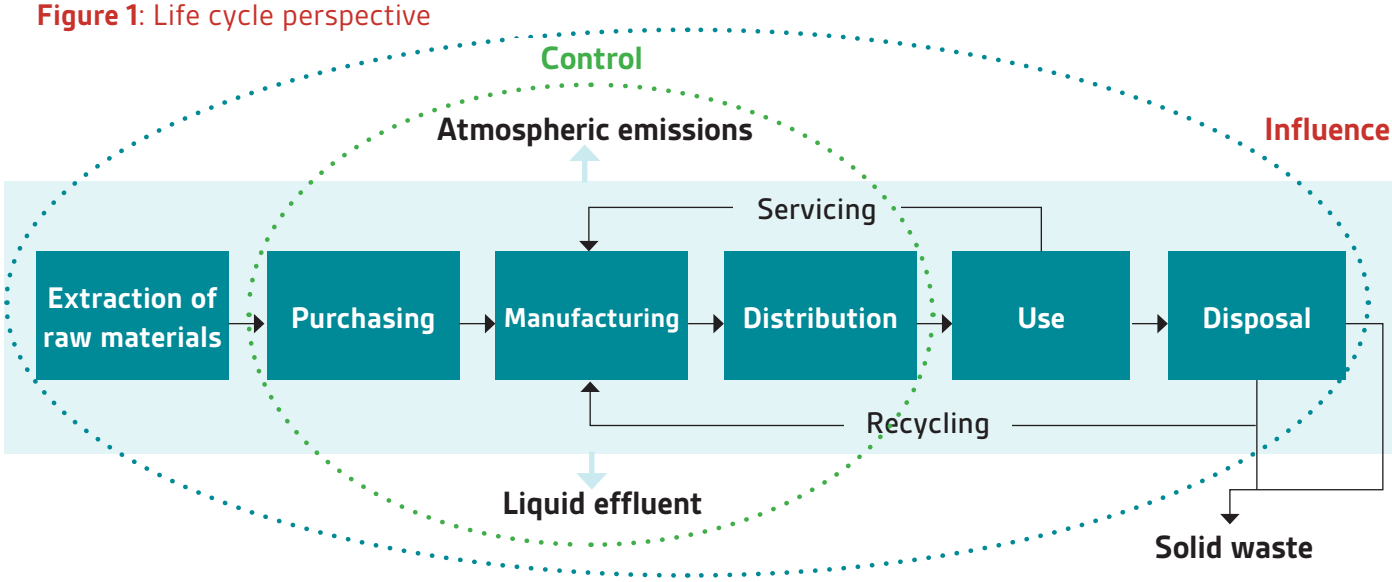
Practitioners who embrace taking a life cycle perspective also discover that it has many of the advantages of taking a process approach. For example in the chain of value diagram (Figure 1), it's easy to see that many of the stages in the life cycle will be in the hands of different organizations.

In an ideal world, to support the delivery of a service or a product, all the organizations in the chain would be operating collaboratively, with a common view of what needs to be done and what success will look like. In reality, the short-term goals of each organization tend to take precedent. This can happen even where successive stages are in the control of one organization, but are spread across different departments within that organization.

However, individual organizational objectives and priorities can take precedent simply because they are open to wider, more local incentives and goals. That is why viewing the management of a whole life cycle means getting a top-level view of the processes and their interfaces.

Wherever there is an interface or a notional boundary between organizations in the cycle, there's also a need for a clear and controlled handover. Conversely, it's only by standing back and looking at the whole cycle that management can begin to see where decisions made upstream limit the number of possible solutions to problems downstream.

Figure 1: Life cycle perspective



By design not by mistake

With any product or service, it is possible to design problems into the successive life cycle changes or design them out. A choice of material at design stage can have significant impacts when it comes to use or disposal.

From a life cycle perspective, some products turn out to have much larger impacts after they leave the factory compared to the impacts of producing them in the first place. Such products benefit hugely from design inputs that acknowledge these impacts further down the cycle and life cycle perspectives reveal the design function as the real point of power environmentally. When there is a drive to rethink the original design brief, to reframe it in different terms, designers may be forced into a position where many of the traditional responses are no longer available. Space is created for truly original thinking. Much is written about the necessity of innovation in terms of organizational health and continuity; less is written about how to remove the obstacles to such a desirable characteristic. Life cycle perspectives give another opportunity to do just that.

There's much more guidance and support for how 'ecodesign' as it's called can be managed within an organization in ISO 14006:2011 *Environmental management systems — Guidelines for incorporating ecodesign*. It has been specifically written to work within ISO 14001, but is also flexible enough to be used with ISO 9001 if preferred.

Context is everything

Looking at the requirements of Clause 4.1 of the standard, it asks organizations to establish the context in which the EMS will operate, as it applies to the organization. Although the wording doesn't directly mention life cycle thinking at this point, it's worth noting that the current guidance in ISO 14004 *Environmental management systems — General guidelines on principles, systems and support techniques*, does mention it with regard to establishing a context. A product or service life cycle has a bearing on the overall context for the organization, not just the scope of the EMS itself. Applying life cycle thinking could reveal a greater ability to affect matters further round the life cycle simply by virtue of where organizations reside in the chain of activities.

By way of illustration, life cycle thinking reveals that a wholesaler would potentially lessen environmental impacts more effectively in the supply chain by implementing a buying policy of low energy products for onward sales at reduced prices than if they simply sought energy reduction opportunities at their warehouse. In this scenario, it isn't a matter of choosing influence over control, but using a commercial position to promote goals that go beyond pure profit and have a profitable outcome.

So at the planning stage, it isn't about using life cycle thinking to drive prioritization (that can come later in the implementation of the EMS) but about taking in the entirety of the 'big picture' and your organization's part in it.

Scope for improvement

We've already touched on the idea that there's more to understanding an organization's effective reach than direct managerial control of activities. No organization exists in a vacuum but is part of a complex web of buying, selling and exchanging. At each transactional point, there's an opportunity to make a decision that favours minimization of negative or promotion of positive environmental impacts.

Until now, most organizations have looked at the minimum starting point of what is in their direct control; an approach that tends to focus on the physical boundaries of an operational site and everything inside that perimeter. Many have not progressed much beyond that view.

Some might have revisited the scope due to managerial or operational changes, some may even have embraced the idea that sourcing raw material can benefit from the attention of an environmental manager, revealing the power of a procurement policy that brings financial as well as reputational benefits. All these management system scopes have their advantages, but they are all dogged by a conscious decision to take a limited view of the whole.

The obvious next step is to relate the scope of your existing EMS to the number of stages in the life cycle of your product or service. Usually, this will be no more than one or two if you are thinking about direct control in relation to the responsibility; looking at the stages immediately adjacent and either side of your operations and the potential for influence can be an eye-opening experience for many.

In such cases, life cycle thinking, whether prompted by internal initiatives, external product or material related legislation, has given new ideas, flushed out new opportunities, new challenges and revealed hitherto unforeseen exposures to risk.

Ultimately this is more than a choice about credibility, reputation or corporate social responsibility. Taking this approach increases an organization's resilience, continuity, risk management and the promotion of innovation through opportunity identification and realization.

If an organization needs to demonstrate that they are taking the 'life cycle perspective' requirement into account, they may also need to account for any obvious disparity between an EMS scope and the specific characteristics of the life cycle involved. So, for example, if areas out of the scope for EMS purposes such as suppliers, transport or end user disposal remain out of scope, the conscious decision taken to exclude such factors may need supporting with further evidence.

Sounds like plan

Looking at the requirement in Clause 6.1.2 one can argue the three elements that have to work together are control, influence and life cycle. They should come from a consistent position and inform one another on an ongoing, dynamic basis. New information or a change in one should lead to the changes being reflected in the others.

In turn, the system overall should reflect the decisions taken with regard to the amount of control and influence that can be exercised, and how far upstream and downstream of operations it can be usefully applied.

Even more importantly, the process of identification and evaluation of significant aspects should also be based on that same life cycle perspective. If it has not been previously applied to that process, it may change the overall significance rating, with new aspects added to reflect the increased sphere of influence being considered.

It can't be over emphasised that this evaluation of aspects is a core element of the system. If the process does not accurately reflect the management system scope, or has an evaluation structure that is not consistently applied across all the potential aspects and impacts, the rest of the system is unlikely to rectify such problems.

An extension of scope and a willingness to start exercising influence through buying habits, information giving or rethinking design elements of a product are all good decisions in themselves but any such changes will need to be consistent with the identified and relevant environmental aspects as well.

A word of caution here; the outputs from the evaluation of aspects and impacts will need a further examination for risks and opportunities in order to meet the requirements of Clause 6.1.1. At the same time, these are added to a consideration of the risks and opportunities related to contextual issues identified in Clause 4.1. All of which means that any change prompted by the life cycle perspective already discussed in relation to these earlier clauses should show up throughout the planning process.

Staying in control

Of course the outputs from all the planning turn into the reality of day-to-day operations. No surprise then that the life cycle perspective gets a specific mention in the major 'doing' clause where the interface between the plan and the complexity of operations is manifested in a series of controls.

Planning and designing those controls is an art in itself, especially where there is no direct employee of the organization involved, where the process might be outsourced, or where the control is shared between the organization and a supplier or contractor. Deciding at what point control becomes influence can also be another important consideration in ensuring that the management of individual processes is consistent, thorough but not constrictive.

Here, consistency with the outputs of the earlier life cycle thinking can shed light on areas that may formerly have been considered indistinct or that have traditionally benefitted from a simple functional approach.

In many cases, it highlights areas where the levers of influence lie. Life cycle work can point out where

- purchasing policies need support with enough details so that it's possible to go beyond lip service,
- service level agreements can be drawn up informed by the chance to access and manage both risks and opportunities,
- potential contract variations with contractors and suppliers can be revisited for mutual benefit, and
- outsourcing processes has or can deliver benefits other than reduced costs by releasing new and improved levels of environmental or resource related performance, still measureable in financial terms.

Plugging into a chain reaction

Life cycle overviews prompt thoughts and questions that range from the strategic to the operational with nothing 'off limits' in terms of investigation; all of which comes to nothing unless the outputs are fed effectively into the decision making process. The key to successful integration of the life cycle insights is structuring the decision making processes around a risk and opportunity exercise for each decision based on the cradle to grave approach.

Life cycle ideas go beyond minimizing the overall adverse environmental impact of a product and embrace a search for innovation, opportunity and promoting a products positive contribution; the widest possible search for improvement.

This may not be a uniformly straightforward process. Organizations can have some of their firmest beliefs challenged about the best choices for the environment in relation to their products and services. A study may reveal that an initiative is simply shifting the environmental burden from one part of the life cycle to another, rather than removing it. As a result, there may be important, fact based decisions to be made about such trade-offs, including the difficult problems associated with quantification and responsibility.

In a similar way, opportunities to use the cumulative power of a supply chain to realize material or energy cost savings, optimized processes or even innovation can be hidden under layers of overlapping but limited viewpoints. Cherished beliefs or ways of working may have to be revisited and new ways of collaborating managed for a newly defined common aim.

That, however, is the power of getting a new perspective. Once you've seen things differently, you can't un-see them. Given the benefits, why would you want to?

The benefits of using management system standards

Using standards can provide a number of key benefits to an organization:

Improved business performance

Using standards ensures all business processes are integrated and aligned with the business strategies of the organization. Used as a business management tool, this will improve performance, remove complexity, drive real value and embed continual improvement.

Improved risk and opportunity management

The requirements to identify risks and opportunities affecting an organization ensures they are managed more effectively thereby improving operational efficiency, reducing duplication, saving both time and money.

Enhanced reputation

Adopting a standard sends a clear message to existing and prospective customers that the organization is taking a leading, innovative and proactive approach to managing the business.

Increased efficiency

By providing a robust framework and focus, standards can increase operational efficiency, reducing expensive mistakes thereby saving time and money.

Increased engagement

By adopting a management system, an organization can ensure all employees are working to common goals driven from the business strategy.

Improved integration

The new common structure for all management system standards will ensure that integration of more than one system will be smoother, without investing a lot of extra time and money.

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