



# Building a Safe, Responsible, and Successful Supply Chain

Effective product stewardship depends upon the availability of complex information in order to evaluate, manage, and mitigate the potential impacts that a product can have on people and the environment, as well as the ability of a company to place the product in specific markets. Companies need accurate data to meet their product stewardship goals and, by so doing, their business goals.

The globalization of commerce has increased the amount and complexity of data to be managed. Supply chains have become less vertically integrated and increasingly scattered. It can be difficult to gather all data necessary to understand associated risks and conditions of participation in any given market.

Successful data management to enable effective product stewardship requires a cross-discipline strategy. Data from multiple sources and in disparate formats must be integrated and combined to facilitate supplier engagement, analytics, compliance determination, stakeholder communication, and Research and Development (R&D). These data must then be kept evergreen as products, suppliers, and regulations change – a challenge made more daunting by the difficulty of accessing product- and component-level attributes through sub-tiers of multi-level supply chains.

When a company does not assemble an accurate and precise collection of product constituents and attributes, they cannot understand, mitigate, and communicate the risk and regulatory profile of a product. Failure to assemble such a collection can lead to supply chain disruption and result in inventory write downs, rejected products, loss of market share, denied market access, share price

damage, and social backlash. This failure has real and tangible consequences beyond the threat of fines and penalties. Consider this fact: in 2012, the Consumer Products Safety Commission in the U.S. stopped 4.8 million units of products that violated safety rules or were found to be hazardous from entering the U.S.<sup>1</sup>

On the other hand, when product stewardship is done well it can open new markets, increase sales, and improve brand. A well-publicized example includes Johnson & Johnson's EARTHWARDS® program, which developed over 73 products in 2014, accounting for approximately \$8 billion in revenue by embedding a product stewardship ethic through design, procurement, manufacturing, and marketing stages of a product's development in which lifecycle impacts of products are evaluated and opportunities to drive improvements are implemented.<sup>2</sup> The success of a program like this one rests on effective management of product data and the ability to compare those data to benchmarks of potential lifecycle impacts.

The challenges and potential benefits of managing complex data to support a company's business goals are clear. Product stewardship can benefit from the advances made in information technology (IT), especially in terms of data collection and aggregation; enhanced processing capabilities to enable easier classification of substances; and efficient data dissemination using a central repository in the format required by the recipient.

1. <https://www.cpsc.gov/content/port-surveillance-news-more-than-48m-units-of-violative-imported-products-kept-at-bay-during>

2. [http://files.shareholder.com/downloads/INJ/3799648053x0x807837/30638d44-13ae-47e2-bd8d-fe40ddebc15a/place\\_holder\\_annual.pdf](http://files.shareholder.com/downloads/INJ/3799648053x0x807837/30638d44-13ae-47e2-bd8d-fe40ddebc15a/place_holder_annual.pdf)

# Multiple Gateways and Stakeholders Involved

A vibrant product stewardship program embraces strong supply chain management, which relies on the ability to retrieve and analyze accurate and timely material and substance information to determine product compliance. ERM has found that framing information management in terms of four gateways (Figure 1) is particularly effective. A description of each gateway and the associated data management is followed by perspective on how to take stock of a company's information management system and then to align it with best practices.

Figure 1: Product Stewardship Gateways



## Product Development

The innovation that drives product development often occurs in a cross-collaborative working environment. However, in the excitement of developing a new product, data management can be chaotic at best. We've seen remarkable products emerge from a jumble of information in notebooks/journals, computer personal folders, external hard drives, and various IT systems. These non-transparent, non-collaborative sources of data storage fail to capture understood or implied researcher knowledge and how that knowledge was created, which often remains in the memories of individual team members. The jumble of information can slow the path to recouping the return on R&D investment by hindering compliance screening to manage evolving and expanding regulatory compliance mandates.

We've helped organizations gain the advantages that come from improved management of R&D data by establishing collaborative data management platforms that enable information sharing and communication between all key stakeholders in the new product development process. New modules are being developed within existing Product Lifecycle Management (PLM) tools to provide compliance information. Some ERM clients have even decided to integrate their product stewardship systems with their PLM tools and Enterprise Resource Planning systems to capture additional information on the components as well as the regulatory and lifecycle impacts, enabling R&D and procurement to make a more informed choice on product composition and supplier selection. The results of this investment in information management include improved assurance of product compliance and accelerated speed to market to build market share and gain a return on the investment in innovation.

## Supplier Engagement

Supplier engagement has become an increasingly important component of effective product stewardship programs. A formalized and clear means to obtain and manage data from suppliers offers the ability to manage business risks more easily, manage the performance of suppliers to achieve business objectives, identify areas of non-conformance or compliance, support market claims, and identify material substitutes for formulation updates. Examples of data that can be leveraged from suppliers to aid in managing non-conformance or compliance are hazard classifications and safety data sheets. The goal is to share data and other information to improve planning and collaboration and engage with the right suppliers to deliver value.

Supplier engagement was an area of early focus by major software providers. Supplier portals were established to enable ease of information exchange; however, the process of getting the supplier to update the portals remained a challenge. An area of improvement has been modifying current processes to incorporate “triggers” to request or seek supplier information based on changes in regulation, product substitutions, or customer and regulatory requests. Procurement organizations have started to incorporate the possibility of such triggers as part of their conversations with their suppliers. While the establishment of this cadence has improved the effectiveness of the supplier portals, they still need to be monitored to ensure they are getting the level of supplier engagement required.

## Formulation and Management of Substances

The increasing global and dispersed nature of manufacturing combined with the growth of global regulatory programs (such as those evolving from the Globally Harmonized System [GHS] of Classification and Labelling) brings new urgency to early analysis of regulatory requirements and supply chain transparency, which can reduce risk in product development. This urgency sometimes collides with suppliers’ protection of trade secret information. The challenge of managing data can be exacerbated by a company’s need to protect confidential business information about finished products while complying with customer and regulatory reporting requirements.

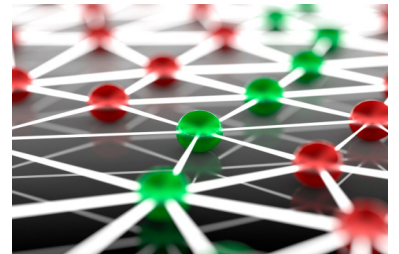
This is a key area where product stewards can leverage the advances made in IT. Current systems are becoming more sophisticated and can manage the rules and requirements for classification of materials as well as model the lifecycle and regulatory impacts. They can also help companies meet their GHS requirements and targets, and ensure that the appropriate information is available to all key stakeholders.

## Customers and Regulatory Notifications

Customer and regulatory notifications offer an interesting challenge in information management in that product stewards must have real-time information on product information and transactional data in order to conform to industry management practices and reporting obligations. As product regulators develop and evolve, the ability to track data for the purpose of auditing and avoiding supply chain disruptions has become a greater challenge and opportunity.

Similar to the supplier engagement challenge, customer and regulatory notification was an area of early focus for the software vendors. Integration across disparate sources of information initially was considered too difficult and therefore individual databases, formats, and workflows were created to meet specific regulations in specific geographies or for a set of similar geographies. This led to duplicate data entry and unsynchronized data in multiple formats and sources.

Given contemporary data demands and tools, ERM works with companies to establish a single source for all notifications. With today's capabilities to build such central repositories and provide the reporting tools that allow customized output formats and content, the challenge is not technical: it is business-or process-driven. Identifying the multiple sources of data and then determining the source of truth can be challenging, but it is essential to the success of effective information management for product stewardship, which is at the heart of the supply chain.



# Taking Stock

## Taking Stock

Leading companies are taking a fresh look at their product stewardship processes and systems using a technique developed by ERM called “ERM’s HealthCheck”. Figure 2 illustrates the logical framework of the HealthCheck, from diagnostic elements to identifying cost-effective system improvements.

The HealthCheck begins with understanding a company’s current product stewardship IT system – including total cost of ownership and state of maturity and readiness. The process then investigates how fit for purpose the product stewardship IT system is to meet a company’s current requirements relevant to the four product stewardship gateways, and how flexible and scalable the system is to meet anticipated future requirements.

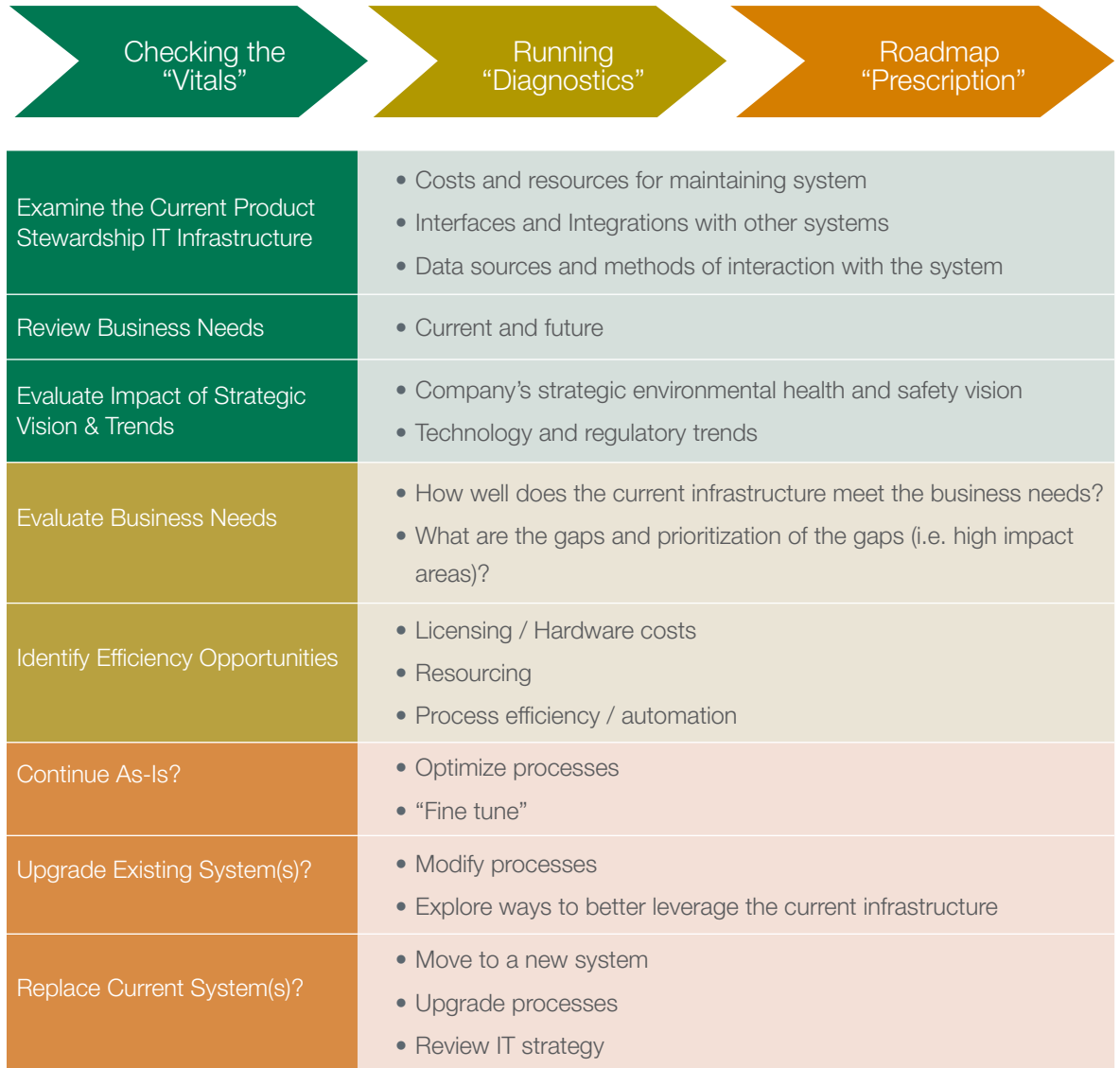
Many product stewardship IT systems use dated technology. While they were best in class at one point in time, they have not incorporated the advances made in IT since, which has made previous “advanced” features now standard and configurable. ERM’s HealthCheck can identify process improvements to meet goals related to the four product stewardship gateways (Figure 1).

ERM’s HealthCheck will support the efficient use of resources to meet rapidly evolving regulations and new business priorities. It can provide an opportunity to re-evaluate and take stock of a company’s product stewardship IT systems and processes, and ensure that the heart of supply chain management continues to remain healthy.



# ERM's HealthCheck

Figure 2: ERM's HealthCheck





# Case Study



How a company effectively revitalized their information management systems to achieve a more effective supply chain by integrating compliance for unimpeded operations.

In spite of the apparent challenges for effective information management of product stewardship, it is important to recognize that it is more efficient to “re-use” correct information than “repeat work”. One such case study emerged from support ERM provided to a company in the Oil & Gas sector.

Gaps in compliance and information management systems had led to supply chain interruptions and significant business risk for this company. The challenge was to develop and implement a product stewardship IT program that would deliver effective support and comprehensive global chemical compliance.

ERM's insight enabled the client to:

- Resolve critical issues under REACH, leveraging pre-registrations of new subsidiaries and restructuring supply chains to achieve rapid results;
- Develop systematic programs for important but less-urgent issues, including compliance with GHS of classification and labeling of chemicals, the U.S. Toxic Substances Control Act (TSCA), “China REACH”, biocides, and other regulatory topics;
- Identify IT needs based upon use of ERM's HealthCheck;
- Prepare specifications for critical new tools by leveraging available expertise; and
- Assist in integrating and troubleshooting numerous off-the-shelf product stewardship IT applications to support effective product compliance.

The resulting business value to ERM's client was the resolution of initial business risks, and the creation of a framework for sustainable, consistent, and dependable ongoing global operations.



# Conclusion

With the globalization of commerce today, product stewardship practices and supply chains have become increasingly scattered. This complicates compliance and data collection, and could lead to supply chain disruption. Multiple stakeholders and their different data requirements exacerbate the information management challenges. However, we can leverage the advances made in Information Management capabilities such as data collection and aggregation, enhanced processing capabilities, and efficient data dissemination to help address these challenges using a systematic and prioritized approach.



## How to Learn More

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## About ERM

Environmental Resources Management (ERM) is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services. We have more than 160 offices in over 40 countries and territories employing more than 4,500 people who work on projects around the world. ERM is committed to providing a service that is consistent, professional and of the highest quality to create value for our clients. We have worked with many of the Global Fortune 500 companies delivering innovative solutions for business and selected government clients helping them understand and manage the sustainability challenges that the world is increasingly facing.