



DIGITAL SOLUTIONS

SYNERGI™ LIFE

Barrier Management module

Creating line of site

Effective barrier management

There has been an increasing awareness of the importance of effective barrier management to prevent major accidents from happening. Still, major accidents continue to occur, with vast consequences to people, the environment, assets and productivity. Investigations have proven that root causes of serious accidents or threats to stable operations are a result of degraded barriers or lack of barriers. Quite often, early indications of degraded barriers could have contributed to proactive implementation of better controls and mitigations.

The Barrier Management module in Synergi Life helps companies identify human, technical and organizational barriers, and to manage those barriers in order to secure stable, safe and predictable operations.

Setting the baseline

Barriers as a means to manage safety have been a focus in many industries for decades. They are often explained by use of the Swiss cheese model, where layers of barriers are seen as cheese slices, and the holes represent the weaknesses of each barrier. The principle of a system that relies on barriers to achieve safety is that a series of preventive barriers have been created to prevent potential threats from escalating into a major accident, often referred to as top events. They are also explained by use of bowtie diagrams.

The bowtie diagram shows preventive barriers on one side of a top event, and on the other side it shows a series of mitigation barriers that are put in place to mitigate the consequences should a top event occur. The connections between the threats, top events, barriers and potential effects of accidents are visualized in Swiss cheese or bowtie diagrams.



Synergi Life Barrier Management - Full bow tie diagram with integrity levels and relevant connections.

Live bowties and barrier dashboards

However, barriers are not static. Their performance at any time will deviate from the original expected performance. This deviation can be adverse, where the barrier performance is degraded, but it might also be positive, and the barrier performs better than expected. At any given point the “true” likelihood of an event and the magnitude of the consequences are a function of the performance of all the barriers in the chain.

In the Synergi Life Barrier Management module we have created a framework to monitor the integrity of barriers and to support the implementation of actionable elements to maintain the intended integrity level.

Starting on the level of a single barrier, your organization is equipped with a tool to monitor the integrity of organizational, technical and operational barriers against the given performance criteria in their operational context. Based on given criteria, barriers are rated as fully functional, degraded or unacceptable.

The integrity level can be affected by information coming from other Synergi Life modules – audits, inspections, near-misses, accident investigations, change processes or other systems, such as maintenance, human resources or ERP.

From an operational point of view, those responsible for the barriers will be tasked to respond on changes in integrity level and to monitor the overall performance of the barrier system. Synergi Life provides aggregated information into live bowties, dashboards and reports. These represent information relevant for decision support on a single accident scenario, on a site level, or aggregated into higher level where benchmarks between sites and organizational units are visible.

Creating the line of sight

This integrated system of dashboards and drill-down functionalities create a line of sight from a corporate perspective down to various operational contexts, individual barrier performance, action plans and improvement work.

*Want to learn more about the Barrier Management module?
Please contact digital@dnvgl.com*