Decision Analytics Meets Asset Management

By Judi Hess, CEO, Copperleaf Technologies

illions of dollars are being invested every year to sustain the infrastructure that we rely on each and every day. For the organizations that manage this critical infrastructure, physical assets are the backbone of their entire operation and they must ensure these assets are operating at optimal performance and not posing a risk to the public, the company, or employees.

At the same time, the landscape of asset management is changing rapidly. A growing number of regulatory bodies are moving to risk-based frameworks, forcing organizations to re-think the way of managing their fleets of aging assets. Finally, the new ISO 55000 international standard that was released in early 2014 is gaining traction and is raising the bar of what is considered "competent" asset management.

On top of all this, businesses today have access to more information than ever before. Companies are shifting the way they operate in order to address all of these requirements and are leveraging analytics to drive improved business processes and financial performance. They are seeking solutions that utilize the vast amounts of data available from internal and external sources, to gain insights and inform their business decisions.

An MIT Sloan Management Review survey of over 2,000 professionals and over 30 executives from 100+ countries and 25 industries, reported: "Making decisions solely with experience is losing its luster, as many companies recognize the need to broaden their use of analytics and pressure staff to become more data-driven. Fully 87 percent of managers believe their organizations need to step up their use of analytics to make better decisions."

• OPTIMIZE
(Prescriptive Analytics):

analytics to make the critical link between strategic and operational decision making. Enables businesses to identify optimal investment strategies to realize the greatest value from assets,
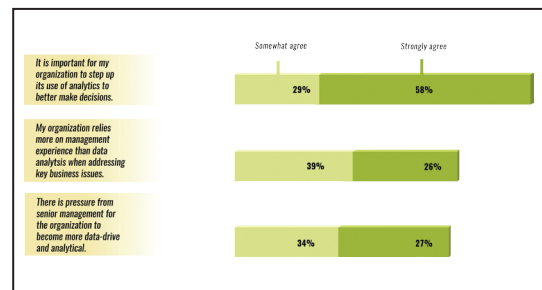
Figure 1
Source: "The Analytics Mandate," MIT Sloan Management Review, May 12, 2014

In the context of asset management, using decision analytics to unlock data insights is a big win. Decision analytics can help asset-intensive organizations address the following processes:
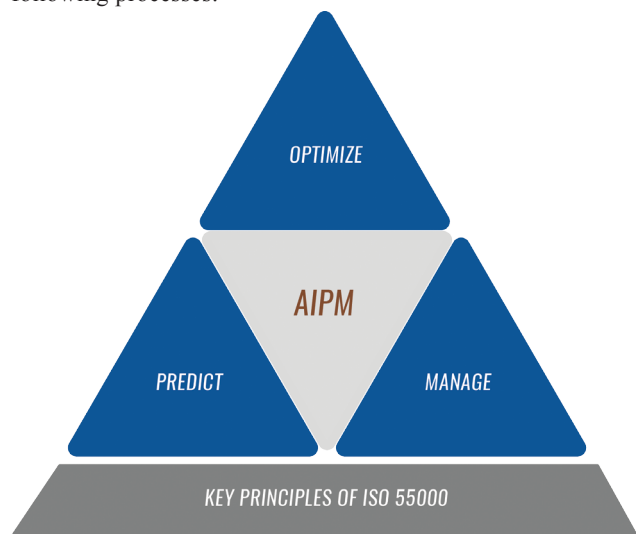
Figure 2
Asset Investment Planning & Management (AIPM)
(Source: Copperleaf Technologies)

and determine the best use of the organization's limited resources (financial, human, equipment, etc.).

• MANAGE
(Descriptive Analytics):

analytics to identify and visualize trends and gain business insights. This would include, for example, highlighting the overall risk inherent in various funding scenarios at the portfolio level over time. Illuminates variances between planned versus actual execution of the plan and the impacts on future investment levels, risks and benefits.

• PREDICT
(Predictive Analytics):

analytics to predict future asset sustainment needs to get out in front of looming financial and resource requirements. Models and simulations can be used to identify interventions that will likely be required in the future, to support the creation of a credible long-term plan.

The key takeaway is that decision analytics is starting to become tablestakes in the race to improve performance and embrace the best practices required by ISO

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But in organizations managing critical infrastructure, a large part of the risk picture is linked to existing assets. An asset failure can have serious consequences, both on service levels and on safety and environmental fronts. This means we need comprehensive and up-to-date asset plans for critical assets to ensure their ongoing performance and reliability, and ultimately, to deliver on the strategic objectives of the company. Moreover, most assets degrade over time, underlining the importance of a robust asset sustainment strategy to mitigate asset risk: doing nothing may not be an option.

thereby leading to more rational and defensible decision making.

This approach also enables businesses to make informed trade-offs between dissimilar investments enterprise-wide. It creates a level playing field to assess sustainment investments, investments in growth, and new opportunities to improve performance or meet regulations, across the organization.

How can businesses ensure that they will be successful in their adoption of decision analytics and use their data to continually improve performance and defend their recommendations?

• Gain strong executive sponsorship for the use of decision analytics within asset management focusing on business value.

• Create a cultural transformation that places high value on data-driven decisions, and the impact that can have on organizational performance.

• Partner with a team that has taken organizations successfully from process design to adoption. The role technology plays is key when shaping the strategy for deploying decision analytics.

• Work top-down, from "what do we value as an organization?" to "what data do we need to support making decisions that will deliver that value?" This reduces and streamlines the effort required for data collection and data quality assurance, which is a significant investment both initially and on an ongoing basis.

• Integrate the business and technology teams across the organization and provide the ground rules and incentives for success.

In asset management, making decision analytics a strategic imperative for your organization and moving rapidly and purposefully forward, will yield significant immediate and future results. If done right, your organization will be able to unlock the power of your data to make the right investment decisions. CR

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55000. This technology is helping organizations think differently and move from expert opinion and intuition-based decision making to evidence-based, risk-informed decision making.

In many organizations, risk is primarily seen as something driven by the outside world or attached to project execution.

In this context, the concepts of value and risk are key vehicles that allow asset managers to communicate with other internal stakeholders (finance, engineering, planning) and with external parties (the board and regulators). They allow us to quantify the value of investing or re-investing in assets,