



# QUANTAVISION

## RISK MANAGEMENT SYSTEM

Providing a systematic and effective holistic linking of managed risk with risk mitigation activities for every business decision, while maximizing profitability and long-term feasibility of your innovative business

LET'S TALK RISK

### ERM

Enterprise Risk Management

### ESG

Environmental, Social & Governance

### GREEN BONDS

International Standards

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SOLUTIONS



Consumers, investors, and policymakers are looking for Low Carbon and Circular Economy projects to realize positive, long-lasting financial growth that simultaneously preserves the earth for future generations. The continuing development of Industrial Biotechnology is creating a sustainable, circular Global Bioeconomy which in turn is yielding innovative profit centers for farmers, rural communities, innovators, and project developers. The time is ripe for investments in the Global Bioeconomy that will revolutionize the way we produce, use and re-use carbon for energy, materials and food.

Bringing these new, complex business models and renewable carbon supply chains into existence is a challenge accompanied by a disparate set of risks that can have major impacts on the long-term sustainability and profitability of these new ventures. Being able to measure, manage, and monitor the risks throughout the business cycle that come with innovative and disruptive business models can mean the difference between success and failure. To manage the risks inherent to building out the Global Bioeconomy we created the QuantaVision Risk Management System, which provides a systematic and effective holistic linking of managed risk with risk mitigation activities for every business decision, while maximizing profitability and long-term feasibility of these innovative businesses.

*Companies with mature risk management practices outperformed their competitors financially, with companies ranked in the top 20% for risk maturity reporting **earnings 3x higher** than companies in the bottom 20%.*

**- 2013 Ernst & Young Study**

## ROOT CAUSE IDENTIFICATION

The most effective risk identification techniques reveal the root cause, which drives subsequent mediating interventions. Identifying the root cause of a risk provides information about what triggers a loss and where an organization is vulnerable. Mitigation activities should be measured quantitatively and aimed at root cause and will also differ depending on the source of risk. That's why enterprise risk management may be called both an art and a science. When risk is considered in the formulation of an organization's strategy and business objectives, enterprise risk management helps to optimize outcomes—both near-term as well as long-term.

# EVALUATION & MONITORING

QuantaVision is a bespoke program based on three classes of complementary evaluation and monitoring criteria:

**Enterprise Risk Management (ERM) Criteria** is a proven process for facilitating company-wide discussions that reveal the most relevant and potentially damaging risks and how best to mitigate them.

*ERM Standards:* Committee of Sponsoring Organizations of the Treadway Commission (COSO), ISO 31000, GRI, OGEC, and RIMS.

**Environmental, Social and Governance (ESG) Criteria** provides guidance on Responsible Investment (RI). RI is evolving from being a niche investment area to become a much larger proportion of the investment market. ESG Criteria ensure that a given bioeconomy project is driving the double bottom line of profit and environmental and social benefit.

*ESG Standards:* Principles for Responsible Investment Initiative (PRI), and The Equator Principles.

## Green Bond International Standards

**(GBIS) Criteria** are intended to encourage sustainability and to support climate-related or other types of special environmental projects. They have specific standards that make them “Green”. Incorporating these standards allows investors to have assurance that the investment continues to perform and meet the initial Green Bond criteria.

*Green Bonds Standards:* Green Bond Guidelines, the Climate Bond Initiative established standards, and the UN Sustainability Development Goals.

Incorporating these three methodologies into the same QuantaVision Risk Management Report provides all the information that will meet the investment and reporting criteria for the diverse set of potential investors, lenders, and policymakers. In addition, the cumulative nature of the QuantaVision™ Risk Monitoring Report also shows the short, medium, and long-term issues and risk mitigants that develop over the course of the business.



# METHODOLOGY

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The QuantaVision methodology leverages the complementary risk information found in the ERM, ESG, and GBIS Criteria by creating a common language and an easy-to-use processing structure that facilitates knowledge transfer within the company. This complementary approach provides superior risk identification and risk mitigation activities that can offset losses and provide a platform for identifying and accessing opportunities that can maximize company performance and profits. The risk library has been modified to encompass specific Global Bioeconomy risks that cover the broad spectrum of the project from initial construction to project maturity. QuantaVision is also based on a centralized, computer-based functionality that addresses:

**Risk Identification:** Processes for continuous scanning of external and internal environments for new and emerging risks and opportunities and maintaining an understanding of existing risks.

**Risk Engagement across Business Functions:** Processes to engage with the other business functions, including finance, supply chain, human resources, legal and sustainability.

**Risk Assessment:** Processes to evaluate, quantify and prioritize enterprise risks using a one to five scale based on detailed Impact, Likelihood, and Assurance criteria that are tailored to each business.

**Risk Response:** Processes to determine and implement an appropriate Risk Mitigation Plan for identified risks, which is also based on the company's appetite for risk.

## **Communication and Disclosure:**

Detailed written analysis and disclosure of the company's "material" risks and risk mitigation plan to lenders, investors, board of directors, and other parties while also meeting regulatory requirements.

# ANALYZING RISK

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The feasibility study process involves making an independent review regarding a number of characteristics of a project:

## **External Risks**

**Economic Risks include:** interest rate, unemployment, oil prices, customer demographics, feedstock supply and availability, transportation, utilities and labor.

**Political Risks include:** federal and international regulations, public perception, guidelines, policies, standards, changing political climates and key politicians.

**Market Risks include:** customer needs and priorities, brand image, brand segment targeting,

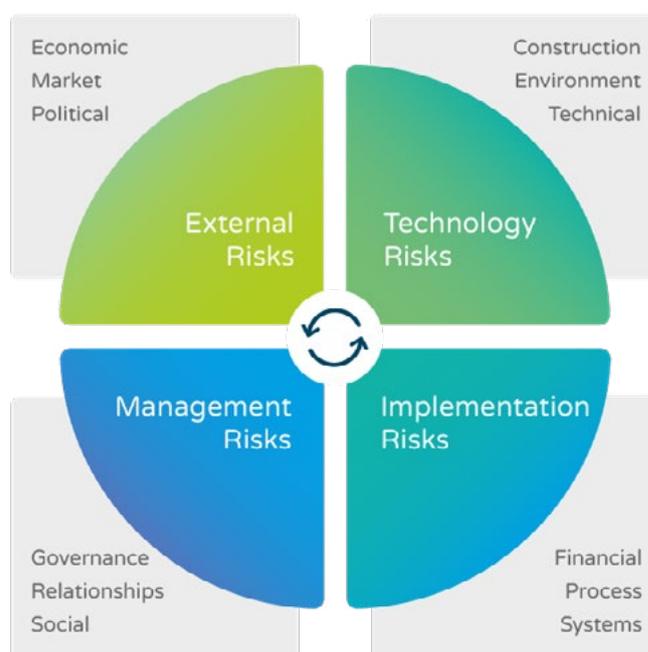
market price volatility, competition from current and future entrants, customer penetration, and sales volume.

## **Technology Risks**

**Construction Risks include:** permitting, weather, commissioning, integration and installation risk, inconsistent production, mechanical failures, spare parts, health and safety, site management and security, materials quality, workmanship quality, and capital cost overruns.

**Technical Risks include:** technology design and implementation, design error, performance or control deficiencies, safeguarding of intangible assets, data collection, utilization of facilities and resources, capacity utilization, and maintenance.

**Environmental Risks include:** climate change, man-made disasters, toxic releases, environmental compliance, carbon emissions, energy efficiency, water stress, biodiversity and land use, raw material sourcing, environmental impact, and renewable electricity.



## **Management Risks**

**Governance Risks include:** authority and responsibility, ethics and integrity, fraud, theft and crime, internally related challenges, authority and responsibility designation, management oversight and metrics, planning for disruptions, contracts, supervision and collaboration, corruption, and instability.

**Relationship Risks include:** third party due diligence, third party provider delivery, teaming arrangements, and commitment from partners.

**Social Risks include:** human capital investment, human capital development, diversity, onboarding and training, employee relations, health and safety, and labor supply chain.

## **Implementation Risks**

**Financial Risks include:** cost and availability of credit, international currency transactions, liquidity, commodity prices, government incentives or taxing schemes, partnership dissolution, customer loss, variable and fixed costs, working capital, and company reputation.

**Process Risks include:** complex products, services or support infrastructure, integrating data, engagement of key stakeholders, workflow requirements, and key stakeholder identification procedures.

**Systems Risks include:** access control, data storage, security over internal data, account management change procedures, network failure, IT operations and maintenance, and IT security.

# COST-BENEFIT ANALYSIS

Recent studies of businesses that have implemented an ERM monitoring system indicate that *time is cut by over three quarters*, from 24 hours to about 6 hours per week. That's 18 more hours developing mitigation strategies for high priorities risk, tending to areas of non-compliance, and improving the efficiency of company operations.

An independent research study, "The Valuation Implications for Enterprise Risk Management Maturity," from Queens University MBA faculty in the UK scientifically proved that each of the 5 levels of ERM capability, as defined and measured by the RIMS Risk Maturity Model (RMM), *delivers a 5 percent increase in an organization's net worth and collectively a 25 percent increase for obtaining all 5 levels of RMM maturity.*

## INCREASE IN PRODUCTIVITY USING AN ERM SYSTEM



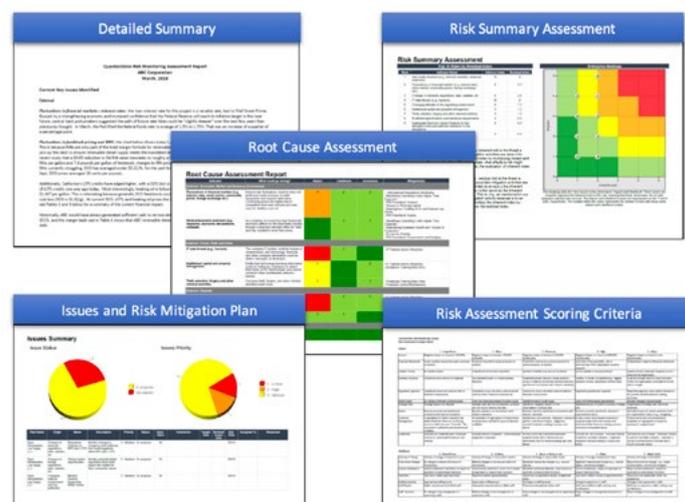
## INCREASE IN NET WORTH USING AN ERM SYSTEM



**In addition to these benefits, the annual cost of QuantaVision is an affordable risk management solution that can be an efficient and effective reporting tool for boards of directors, investors, lenders, and other stakeholders.**

# SPECIALIZED REPORTS

The QuantaVision team provides comprehensive and independent monthly or quarterly reports that provide detailed risk and risk mitigation activities for the top-rated risk areas, including risk tracking activities and progress reports. A detailed view of all of the risk categories and the current risk rating is also shown and ranked using the personalized Risk Assessment Scoring Criteria. The QuantaVision business intelligence reporting engine can be customized, and all reports can be exported, printed or even scheduled to run at a set frequency for automatic delivery straight to your email inbox.



## THE QUANTAVISION RISK MANAGEMENT SYSTEM OFFERS EXCEPTIONAL SERVICES TO INCLUDE:

- ▶ Experienced staff with deep relationships in all aspects of renewable energy and sustainable technologies
- ▶ Software-based risk information architecture using international standards
- ▶ Bespoke comprehensive risk platform to deliver continuous risk evaluation and mitigation
- ▶ Detailed, integrated set of periodic reports that can identify hot spots, track progress, and execute risk mitigation strategies
- ▶ Independent verification throughout the process that assures of transparency and accuracy over the life of the loan, bond, or investment
- ▶ An efficient and effective reporting tool for investors, lenders, and other stakeholders

## OUR COMPANY

Cynthia Thyfault, Founder and CEO, has provided over 30 years of successful business management consulting for the development, management and funding of biomass conversion technologies, including biofuels, bio-chemicals, and bio-power, both domestically and internationally, including obtaining over \$3 billion in funding for clients.



## OUR MISSION IS TO UTILIZE INDUSTRY BEST PRACTICES AND NEW OFFERINGS TO ACCELERATE THE DEVELOPMENT AND DEPLOYMENT OF LOW CARBON TECHNOLOGIES WORLDWIDE BY:

- ▶ Providing expertise to assist in guidance and recommendations for global legislative and regulatory best practices to allow for bioeconomy investment and funding to occur.
- ▶ Working with stakeholders to effectively evaluate, share and promote sustainable best practices for the entire value chain life cycle.
- ▶ Launching the QuantaVision Risk Management System to successfully measure, manage and mitigate the diverse risks of the bioeconomy industry.
- ▶ Developing a global network of potential investors actively searching for ERM, EGC, and Green Bond criteria to facilitate a more rapid advancement of low-carbon bioeconomy-related investments.
- ▶ Managing a experienced team of global consultants that contribute a wide variety of specialties including fuel standards and incentives, regulation and legislation, international governmental relationships, regulatory issues, multilateral financing, bio-based engineering, environmental issues, and bio-based product sales channels.

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