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Thrivaca[™] The Mathematics of Cybersecurity

Cyber risk - Warren Buffett says it's the number one threat in our world. In your business it's crucial - the risk is real, and it's all around us and growing. But how much do we know? Can I say what my total cyber risk is, in financial terms? Where would I start, to really attack my greatest sources of cyber risk?

Arx Nimbus has a passion to deliver quantitative, insurance-grade cyber risk understanding to every organization. Through our Thivaca™ product, we bring real-world insight to the impact and dynamics driving cyber risk. Developed by practicing cyber professionals and PhDs, Thrivaca allows every enterprise to know where, why and how much cyber risk is impacting the organization, and to direct investment and effort to the areas of greatest impact. There is simply too much at stake in today's enterprise to not get this right.

Based on a proprietary algorithm reflecting actual attack probabilities, Thrivaca's mathematical model profiles the effects of cybersecurity risk using your vulnerabilities, your financials, and your exposure. Now enterprise cybersecurity risk can be identified at its source. The degree and relative level of cybersecurity risk is quantified by Thrivaca in financial terms - enabling transparency and oversight for the cybersecurity program for the first time.

GDPR Regulations state:

"Risk should be evaluated on the basis of an objective assessment, by which it is established whether data processing operations involve a risk or a high risk."

(EU Source: http://www.privacy-regulation.eu/en/recital-76-GD-PR.htm)

Who cares about cyber risk?



The National Association of Corporate Directors says:

"Board-Management discussions about cyber risks should include identification of which risks to avoid, which to accept, and which to mitigate or transfer through insurance"

(https://www.nacdonline.org/Store/ProductDetail.cfm?ItemNumber=10687)

The Language of Cyber-Risk

How does management currently select the best cybersecurity options and capabilities for the organization? Often, these decisions were made based on professional judgment or expert opinion. Over time, experience and litigation have caused an aversion to personal opinion as a basis for a strong cybersecurity program. Just as no modern airline would operate aircraft without adequate automation based on pilot judgement alone, so cybersecurity has proven too vital to leave to the risks associated with human error.

Using the detailed definitions of accepted audit standards, controls, and regulatory requirements, Thrivaca uses the inter-relationships of the key factors of threats, risks, vulnerabilities and capabilities to properly measure the effects of each area of the cybersecurity program on risk. Using the common language of mathematics and finance, Thrivaca makes visible the effects of the vital decisions around investment, risk tolerance, insurance and capability that simply must be gotten right.

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Key Questions to Ask

- How do I gain actual knowledge of my own cyber security risks?
- What are my top cybersecurity risks, and what is their relative financial impact?
- What is the value of acquiring specific cybersecurity capabilities?
- How can I chronicle my efforts at risk reduction in terms that put me on my best footing for regulatory and legal preparedness?
- How can I profile probabilities of certain risk scenarios?
- What is the value to the enterprise of risk-related measures like cyber insurance?
- How do we gain common direction and agreement among senior management to confidently support a well-targeted cybersecurity program?

Thrivaca focuses on whole-enterprise cybersecurity status and quantitatively analyzes this data against prevailing regulatory frameworks to answer these and other key questions - with results in just 48 hours.

About Arx Nimbus

Arx Nimbus radically advances how companies understand and optimize their cybersecurity program. Our passion is to bring real, actionable knowledge of cybersecurity risk to enterprise, investors, advisors and insurers worldwide. Thrivaca was designed using fact-based, mathematically modelled analyses of the cybersecurity landscape. Arx Nimbus applies the Thrivaca platform to model and evaluate the effects of Capabilities, Threats and Vulnerabilities on Risk.

Leaders seldom know how to anticipate and evaluate the impact of undefined cyber risk. Bridging this gap, Thrivaca uses threat analysis, automated scanning, regulatory standards, vulnerability data and probability algorithms to bring insurance-grade quantitative models to properly gauge the financial impact of likely outcomes based on different security decisions. Knowing the financial meaning of your options and strategies lets you prioritize and invest with greater confidence and precision.

The US Securities and Exchange Commission says:

"Cybersecurity risks pose grave threats to investors, our capital markets, and our country. Controls and procedures should enable companies to identify cybersecurity risks and incidents, assess and analyze their impact on a company's business, evaluate the significance associated with such risks and incidents, provide for open communications between technical experts and disclosure advisors, and make timely disclosures regarding such risks and incidents."

(SEC Source: https://www.sec.gov/rules/interp/2018/33-10459.pdf)



Thrivaca enables cyber risk reduction, by mathematically quantifying risk dimensions into financial terms:

Attack probability and monetary impact forecast

How much and where to invest in capabilities to reduce risk

Comprehensive preparedness for regulatory compliance and litigation defense

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