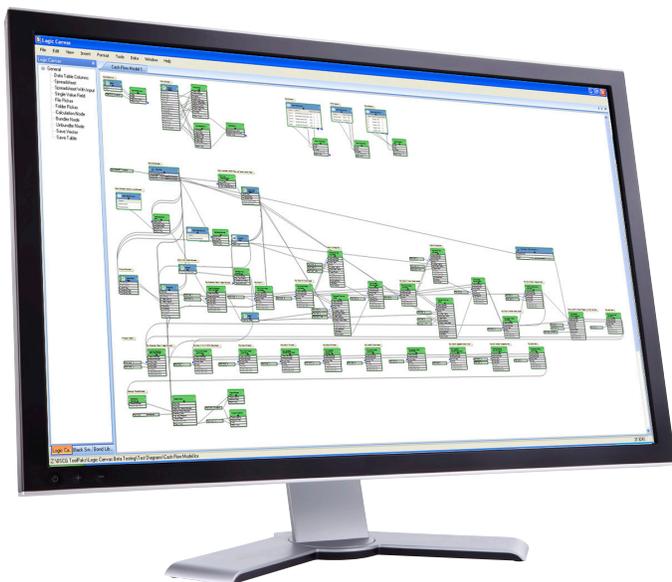


# MODEL VALIDATION



Model risk is on the rise as financial institutions use an increasing number of models for financial planning and asset-liability management. Model risk exposes institutions to financial loss and a damaged reputation with investors and regulators. Model validation is the cornerstone of effective risk management to help identify, manage and mitigate model risk.

With so much at stake, it is imperative that banks and insurance companies adopt a framework that promotes reliable and consistent model validation. Black Swan Consulting has been providing model validation services since 2008 and has developed **Logic Canvas®** as an innovative analytic framework to rapidly develop cost-effective model validation solutions.



Black Swan specifically developed Logic Canvas® as a financial modeling platform to address the shortcomings of traditional modeling software.

We rely on Logic Canvas® in all of our consulting work to quickly and efficiently model complex calculations.

We know from experience that financial institutions use a combination of spreadsheet, homegrown and vendor models across many different parts of the organization. Rather than setting up an ad-hoc validation process for each model, organizations can gain a competitive advantage by adopting a centralized and independent model validation framework.

Please visit us at: [www.BlackSwanConsultingGroup.com](http://www.BlackSwanConsultingGroup.com)

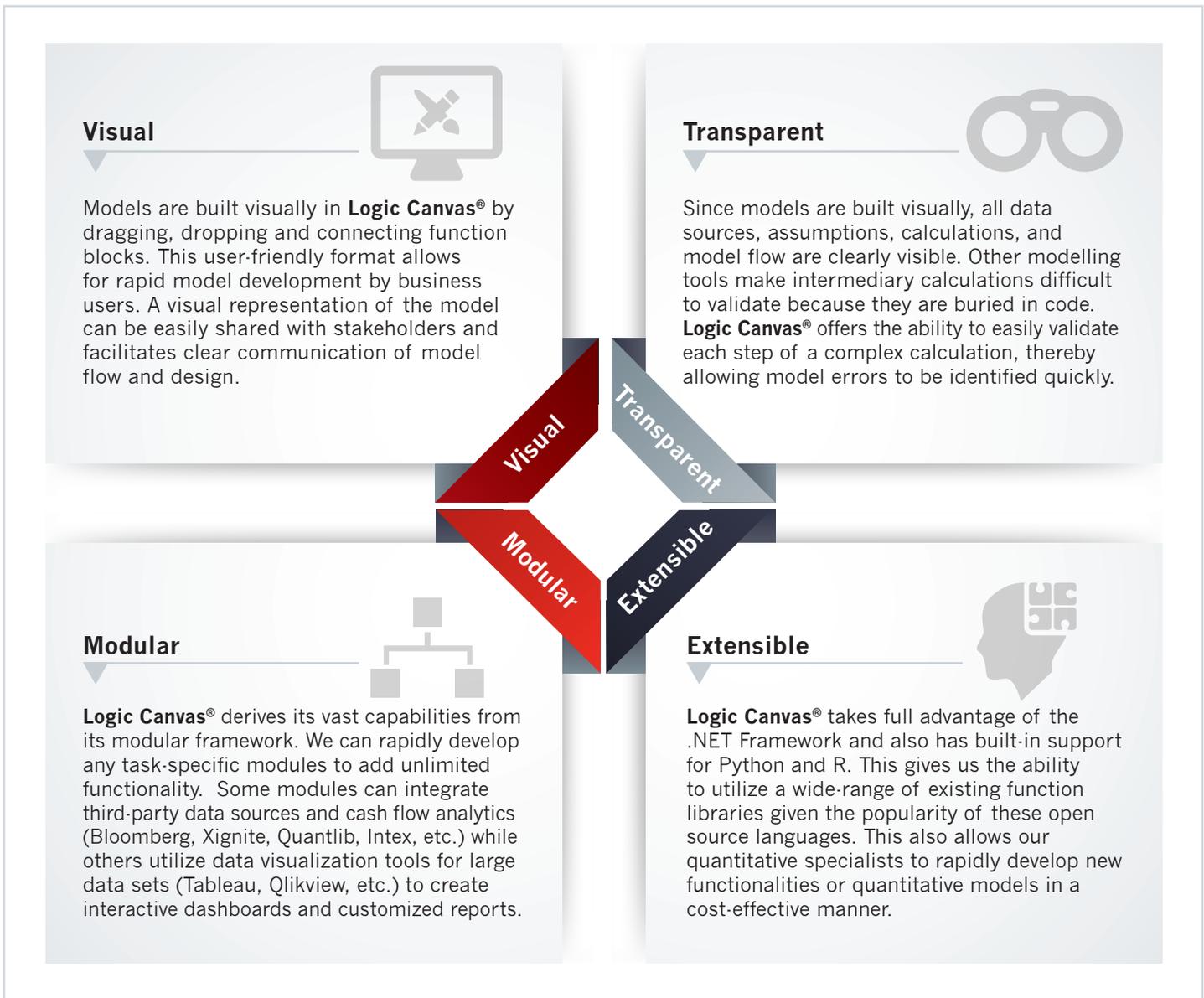
Our telephone number is (917) 338-2380

Inquiries related to our products and services can be directed to

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**Logic Canvas®** is well suited for centralized model validation through the inherent benefits of its design:



## About Black Swan

Black Swan Consulting was founded in 2008 to address the need of financial institutions for expert and independent advice and services. Our capital market specialists provide expertise on matters such as valuation, investment strategy, model development and validation, and risk assessment. As fixed income specialists, we work with complex models on a daily basis and have performed model validation for financial institutions of varying sizes. Our team members individually have many years of complex financial modeling experience and bring a fresh perspective and awareness of best industry practices.

### Cost-Effective:

Model validation work tends to be cyclical with a fluctuating workload. Working with a third party can free up company resources to focus more on revenue generating business.

### Unique Toolset:

Black Swan utilizes **Logic Canvas**®, which is a specialized analytical platform developed specifically to handle complex models.

### Multi-disciplinary Approach:

Black Swan's team of specialists include capital market, risk management, legal and compliance, quantitative and technology developers that have the requisite expertise to ensure completeness of service.

### Experience:

Black Swan's team members individually have many years of complex financial modeling experience. Especially with respect to cash flow projections, we can validate and make recommendations on appropriateness of scenario assumptions used (default, prepayment, loss severity, delinquency rates, etc.).

### Insight:

External model validation experts can offer a unique perspective and will more readily identify model errors and areas for improvement.

### Product Expertise:

As fixed income specialists we have a high level of financial product expertise especially with respect to complex derivatives and structured products.

### Full Support:

We stand behind our work and will fully support addressing any questions/ concerns from auditors and regulators.

