

Predictive & Actionable Intelligence



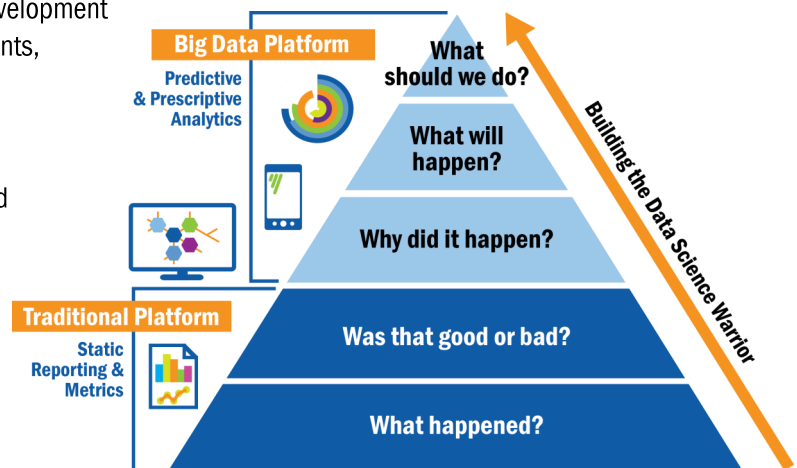
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Big Data & Advanced Analytics

Big data is not just about a lot of data—it is about the speed of managing a wide variety of structured and unstructured data to enable new and undiscovered analytic insights for business value

In today's data environment, social, sensor, and spatial data sources have exploded, personal and wearable devices have become ubiquitous, cloud computing has become commonplace, and wireless connectivity has become nearly universal

Advances in information technology (IT) infrastructure solutions, such as Hadoop and similar data lake concepts, are enabling greater utilization and flexibility when dealing with free text data, log files, streaming data, and other non-traditional data sources. ILW is at the forefront of big data technologies with proven experience and expertise in platform engineering, data architecture, and development. Our big data teams have deep experience with agile development of complex big data lake environments, building reusable frameworks with Hadoop, and leveraging free and open source software (FOSS). Our data architects design and build powerful, customized big data infrastructures using massive parallel processing—enabling the advanced analytics and data visualization capabilities needed in today's world of large complex data sets.



Advanced analytics and data science harness big data to uncover the right data for improved real-time decision making and predictive and prescriptive estimates, trends, and patterns

With the flood of data from smart devices and increased mobile data traffic, as well as the melding of structured and unstructured data, extracting value can be difficult, patterns may get lost, relevant data may be unrecognized, and unmeaningful results can lead to confusing and ambiguous conclusions

Today's analysts face a wide range of pain points in their analytics activities. Data science is a multidisciplinary approach that looks at the raw data and blends statistical inference, algorithm development, and machine learning to solve complex analytic problems, hone analysis results to a more manageable and relevant space, and reveal meaningful patterns and relationships. ILW's data scientists possess sound statistical knowledge, broad computational expertise, and intense intellectual curiosity to uncover the truth that lies hidden beneath the surface—helping businesses move the analysis bar from reactive and descriptive to proactive and prescriptive.

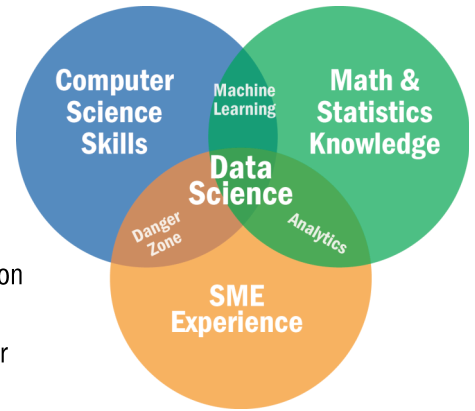
ILW has experience developing full-stack big data and predictive analytics solutions, enabling businesses to discover valuable new insights faster and easier

Shifting from an Intuition-Based Science to a Data-Driven Science

Applying Data Science to Big Data for Predictive Analytics

ILW's data scientists apply statistics, probability, and machine learning techniques to business problems using tools like SAS, R, Python to find unknown unknowns, make predictions, and assign probabilities

- ▶ **Why did something happen?** Statistical methods like principal component analysis point to the most important factors
- ▶ **What is likely to happen?** Techniques like forecasting (time series) and regression models are examples of two techniques our data scientists apply
- ▶ **What should we do?** Combining statistical methods with forecasting into a linear program to suggest a course of action with probability of success



ILW's data architects and developers are optimizing big data and advanced analytics efforts with the latest modern technologies, helping to solve complex analytical questions, including insights into unknown unknowns

SUCCESS STORY

Big Data Framework

ILW implemented an initial pilot program for a top 25 retailer to roll out a big data analytics framework on Hadoop, and has continued expanding the logical data warehouse/big data effort for 4+ years to enhance the data lake and advanced analytics modeling framework for improved data analytics and insights.

- ▶ **Conditioned Based Maintenance:** Determined the optimal point to replace/repair refrigeration units versus waiting for failure or set schedule
- ▶ **Pharmacy Fraud Detection:** Uncovered pharmacy fraud and theft by identifying anomalies in data when looking at typical pharmacy performance indicators
- ▶ **Supplier Strategic Sourcing:** Improved time to identify profitability for bulk packaging by supplier, product, region, and time from 40 days to 18 hours
- ▶ **Insightful Customer Analytics:** Categorized and related unstructured data and stored mobile logs, weblogs, marketing campaign data, and transactions in their native unstructured format

SUCCESS STORY

Predictive Analytics

ILW is using advanced analytics to model the supply chain for an Air Force weapon system and increasing the readiness, efficiency, and availability of planes in the fleet. ILW data scientists are developing a robust and efficient methodology to identify long-term trends and less obvious indicators to predict which parts will lead to mission incapable incidents that are likely to have long durations, effectively grounding the planes.

- ▶ **Predictive Model:** Designed a predictive model to rank parts based on the risk the parts present to the supply chain and provided a roadmap to address identified supply chain problems
- ▶ **Improved Metrics:** Redesigned faulty metrics to be statistically robust for reparables
- ▶ **Right Part/Right Time:** Item managers spend less time gathering and massaging the data
- ▶ **Risk Mitigation:** Identified probable severity of the risk and actionable information for item managers to prevent future problems

Contact Us Today!

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Technology Partners

ILW is proud to be in partnership with leaders at the forefront of today's technologies



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