

# A competitive intelligence measures in business forecast with renewable intensity sources

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## Abstract

Extracting the data automates the process of finding predictive information in a large database. The ability to gather and analyze effectively business and corporate intelligence is a major advantage for all practitioners in high-tech industries. Competitor analysis in marketing and strategic management is an assessment of the strengths and weaknesses of current and potential competitors. This analysis provides both an offensive and defensive strategic context to identify opportunities and threats. Marketing is the process of communicating the value of a product or service to customers, for the purpose of selling that product or service. Competitive Intelligence (CI) may not be inappropriate and compares and contrasts competitive intelligence with business intelligence, competitor intelligence, knowledge management, market intelligence, marketing research, and strategic intelligence. Competitor analysis is an essential component of corporate strategy. Predictive analysis is using business intelligence data for forecasting and modeling. It is a way to use predictive analysis data to predict future patterns. In this paper we propose the competitive measures between the two renewable energy sources (RES) namely solar and wind energy. The factors used for determining the competitions between the two sources are price, quality, selection, service, location, reliability, stability etc.

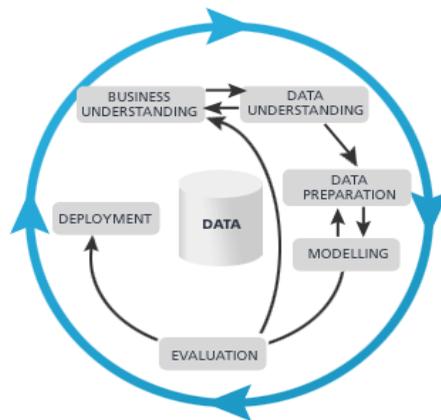
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**Keywords:** Product, purpose, communicate, opportunity.

Data mining is the process of analyzing data from different perspectives and summarizing it into useful information - information that can be used to increase revenue, cuts costs, or both. Data mining software is one of a number of analytical tools for analyzing data. It allows users to analyze data from many different dimensions or angles, categorize it, and summarize the relationships identified. Companies have used powerful computers to sift through volumes of supermarket scanner data and analyze market research reports for years. However, continuous innovations in computer processing power, disk storage, and statistical software are dramatically increasing the accuracy of analysis while driving down

the cost. Data mining is primarily used today by companies with a strong consumer focus - retail, financial, communication, and marketing organizations. It enables these companies to determine relationships among “internal” factors such as price, product positioning, or staff skills, and “external” factors such as economic indicators, competition, and customer demographics. And, it enables them to determine the impact on sales, customer satisfaction, and corporate profits. Finally, it enables them to “drill down” into summary information to view detail transactional data. With data mining, a retailer could use point-of-sale records of customer purchases to send targeted promotions based on an individual’s purchase history.

Data mining uses information from past data to analyze the outcome of a particular problem or situation that may arise. Data mining works to analyze data stored in data warehouses that are used to store that data that is being analyzed. That particular data may come from all parts of business, from the production to the management. Managers also use data mining to decide upon marketing strategies for their product. They can use data to compare and contrast among competitors. Data mining interprets its data into real time analysis that can be used to increase sales, promote new product, or delete product that is not value-added to the company.



**Figure 1. Data Mining Process Model**

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Data mining is the analysis of historical business activities, stored as static data in data warehouse databases, to reveal hidden patterns and trends. Data mining software uses advanced pattern recognition algorithms to sift through large amounts of data to assist in

discovering previously unknown strategic business information.

Examples of what businesses use data mining for include performing market analysis to identify new product bundles, finding the root cause of manufacturing problems, to prevent customer attrition and acquire new customers, cross-sell to existing customers, and profile customers with more accuracy. In today's world raw data is being collected by companies at an exploding rate.

Each data mining method can be characterized in terms of four aspects:

- ❑ The models or patterns that are used to describe what is searched for in the data set. Typical models are dependency rules, clusters and decision trees.
- ❑ The scoring functions that are used to determine how well a given dataset fits the model. This is comparable to the similarity functions used in information retrieval.
- ❑ The method that is applied in order to find data in the dataset that scores well with respect to the scoring function. Normally this requires efficient search algorithms that allow identifying those models that fit the data well according to the scoring functions.
- ❑ Finally the scalable implementation of the method for large datasets. Here indexing techniques and efficient secondary storage management are applied.

In particular the last two issues differentiate data mining from related areas like statistics and machine learning: scalability for large databases is a key problem in data mining and only statistical and machine learning techniques that scale well are applicable for data mining. Data mining in customer relationship management (CRM) applications can contribute significantly to the bottom line. Rather than randomly contacting a prospect or customer through a call center or sending mail, a company can concentrate its efforts on prospects that are predicted to have a high likelihood of responding to an offer.

### **Competitive Analysis**

Competitor analysis in marketing and strategic management is an assessment of the strengths and weaknesses of current and potential competitors. This analysis provides both an offensive and defensive strategic context to identify opportunities and threats. Profiling coalesces all of the relevant sources of competitor analysis into one framework in the support of efficient and effective strategy formulation, implementation, monitoring and adjustment.

Predictive analytics is using business intelligence data for forecasting and modeling. It is a way to use predictive analysis data to predict future patterns. It is used widely in the insurance, medical and credit industries. Assessment of credit and assignment of a credit score is probably the most widely known use of predictive analytics. Using events of the past, managers are able to estimate the likelihood of future events.

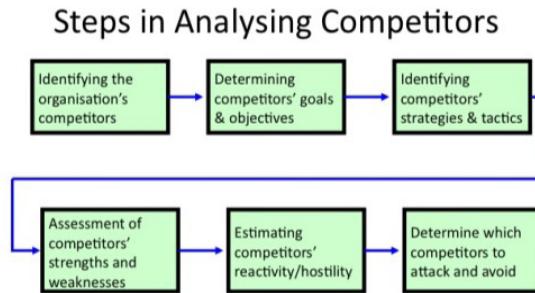


Figure 2.1 Steps in analyzing competitors

A broad definition of competitive intelligence (CI) is the action of defining, gathering, analyzing, and distributing intelligence about products, customers, competitors and any aspect of the environment needed to support executives and managers in making strategic decisions for an organization.

Key points of this definition:

1. Competitive intelligence is an ethical and legal business practice, as opposed to industrial espionage, which is illegal.
2. The focus is on the external business environment
3. There is a process involved in gathering information, converting it into intelligence and then utilizing this in business decision making.



Figure 2.2 Measuring Rivalry products

Marketing strategies serve as the fundamental underpinning of marketing plans designed to fill market needs and reach marketing objectives. There are five competing concepts under which organizations can choose to operate their business; the production concept, the product concept, the selling concept, the marketing concept, and the holistic marketing concept.

### Collection of Data

This module collects the data of the solar energy nuclear and hydro energy for the past few years. These data has full details of energy produced and consumed. It collects the data for all sources of energies. These dataset is useful for analyzing the existing and predicts for the future requirements.

### Calculating the Factors

This module is for calculating the factors for the different source energy. Each energy having different factors and will have different values for that factors, these factors are calculated by using the dataset of the past few years of data.



Figure 3. Calculating the factors for past years data.

### Comparing the Factors

This module is for comparing the factors to find out the best energy. The calculated factor values are compared for the sources of energy and the best one is chosen from the existing results of energy productions.

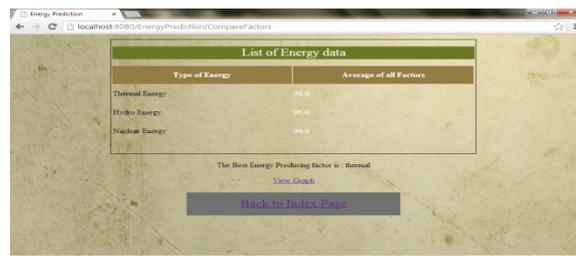


Figure 4. Comparing each factors.

### Providing Suggestions for Future

This module gives the suggestions for the future, by denoting which one is best and which can stay for more upcoming years. And also provide how much of energy required by all particular source to solve the requirements of the future.

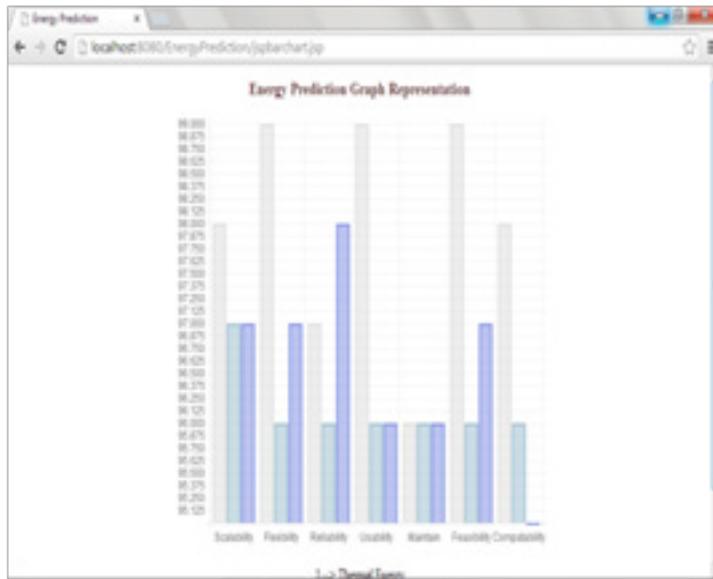


Figure 5: Providing suggestion for future usage.

## Conclusion

This paper assumes that one of the essential factors affecting the intensity sources is competition and discusses how the power of the incumbent energies are influenced by the number of competitors' entry into the near perfectly competitive market under the three specified actions, with an aim to assist the managers in formulating an appropriate strategy to maximize profits from the incumbent's viewpoint. Based on the results from the application case, the inclusion of the collected information leads to the same results for the prior and posterior analyses in this study, i.e., the upgrade of the existing product in terms of efficiency or capacity. In our future work we are going to measure the competitive measures between the two or more intensity sources such as solar, nuclear, hydro and wind energy and predicting which one of the energy will be best and can give more profit.

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