

An Analytical Evaluation of Trends in Facilitation of Practices

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Abstract

Business intelligence has become mainstream in recent scientific research trends. The purpose of this research is to study the emerging and fading themes of the business intelligence domain through an analytical overview of keywords, titles and abstracts. Among Scientometric methods for representing the emergent and disappearing trends, the 'burst detection' algorithm has been chosen and applied to the current dataset of high-ranked international papers which can help scholars and practitioners to understand a better overview of business intelligence field by visualizing the changes in a recent time period. For this purpose, the data related to business intelligence has been gathered from Web of Science (WoS) core collection dataset between the years 1980-2014 and the burst detection algorithm has been applied on the 'abstract', 'title' and 'keywords' of the dataset which has shown interesting informative results for the future researchers to concentrate on.

Keywords : business intelligence, emergent trends, Scientometric, burst detection Algorithm, bibliometrics, literature review

INTRODUCTION

Business intelligence has become mainstream in recent scientific research trends. The purpose of this research is to study the emerging and fading themes of the business intelligence domain through an analytical overview of keywords, titles and abstracts. Among Scientometric methods for representing the emergent and disappearing trends, the 'burst detection' algorithm has been chosen and applied to the current dataset of high-ranked international papers which can help scholars and practitioners to understand a better overview of business intelligence field by visualizing the changes in a recent time period. For this purpose, the data related to business intelligence has been gathered from Web of Science (WoS) core collection dataset between the years 1980–2014 and the burst detection algorithm has been applied on the 'abstract', 'title' and 'keywords' of the dataset which has shown interesting informative results for the future researchers to concentrate on.

5 ways to critically evaluate a trend or forecast

1. Understand intentions. ...
2. Check the data is real. ...
3. Be critical of insiders and 'experts'. ...

4. Beware of attempts to influence the future. ...
5. Consider blocking forces.

Trend analysis is the widespread practice of collecting information and attempting to spot a pattern. In some fields of study, the term "trend analysis" has more formally defined meanings?

Although trend analysis is often used to predict future events, it could be used to estimate uncertain events in the past, such as how many ancient kings probably ruled between two dates, based on data such as the average years which other known kings reigned.

Trend analysis is an analysis of the trend of the company by comparing its financial statements to analyze the trend of market or analysis of the future on the basis of results of past performance and it's an attempt to make the best decisions on the basis of results of the analysis done.

Trend analysis involves collecting the information from multiple periods and plotting the collected information on the horizontal line with the objective of finding actionable patterns from the given information. In Finance, Trend Analysis is used for Technical analysis and Accounting analysis of stocks.

What is the Importance of Trend Analysis?

- Trend analysis tries to find out a trend lie **a bull market run**, and make a profit from that trend unless and until data shows a trend reversal can happen, such as a bull to bear market. It is most helpful for the traders because moving with trends, and not going against them, will make a profit to an investor. The trend is the best friend of the traders is a well-known quote in the market.
- A trend is nothing but the general direction the market is heading during a specific period. Trends can be both growing and decreasing, relating to **bearish** and bullish markets, respectively.
- There are no criteria to decide how much time is required to find out the trend; generally, the longer the direction, more is the reliable considered. Based on the experience and some empirical analysis, some indicators are designed, and standard time is kept for such indicators like 14 days **moving average**, 50 days moving average, 200 days moving average.
- Purpose of evaluating trends is to predict the effects they will have on your company and to make changes that will allow you to benefit from each trend. For example, a retail business aimed at young families may want to expand if it sees a trend of more young families moving to the area. An app developer focused on 10-inch tablets may want to develop a version for smaller tablets if there is a trend toward a 7-inch size. Once you have evaluated a trend to make sure it is based on real data and have adjusted for possible blocking actions, you have to make the changes in your business that the trend requires.

The current worldwide coronavirus pandemic caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has resulted in millions of confirmed infections, cases of the associated COVID-19 disease and deaths [1,2]. The clinical manifestations of acute infection vary widely from asymptomatic disease to coagulopathy, severe viral pneumonia, and lung failure [3,4] and the extent of chronic organ damage and COVID-19 disease remains to be established. A definitive diagnosis of SARS-CoV-2 infection currently relies on the use of RT-PCR to identify the virus in respiratory samples [5-7]. This only identifies current illness or a viral carriage. The performance of the RT-PCR test is dependent on various factors including time of sampling, viral load and how thoroughly the sample is taken from the nasopharynx[8]. Consequently, a significant proportion of infected individuals may be missed from screening programmes. In contrast, robust

serology assays which reliably detect the presence of antibodies against SARS-CoV-2, can determine whether individuals with or without symptoms have previously been infected, thus providing valuable information about prior exposure for epidemiological purposes and the individual patient. The introduction of serological testing throughout the UK was rapidly implemented in the spring of 2020 to cover a variety of scenarios. Accordingly, we scanned the first-generation antibody assay horizon for candidate tests we could rollout into routine laboratory diagnostics. During the early months of the pandemic, numerous SARS-CoV-2 immunoassays were rapidly developed and placed on the market. These assays used different antigenic proteins; some used whole virus lysate, recombinant nucleocapsid (NC) or full spike (S) proteins, while some used modified proteins or peptides of the NC.

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The goal of evaluating trends is **to determine whether you can use them to predict future change and whether a particular trend has any relevance for your business**. You have to evaluate the size, direction and trajectory of a trend before you can react to it.

Realization of the fact that "Time is Money" in business activities, the dynamic decision technologies presented here, have been a necessary tool for applying to a wide range of managerial decisions successfully where time and money are directly related. In making strategic decisions under uncertainty, we all make forecasts. We may not think that we are forecasting, but our choices will be directed by our anticipation of results of our actions or inactions.

Indecision and delays are the parents of failure. This site is intended to help managers and administrators do a better job of anticipating, and hence a better job of managing uncertainty, by using effective forecasting and other predictive techniques.

Trend analysis offers a measurable and verifiable method for businesses to project future outcomes. It can be used for failure analysis and as an early warning indicator of impending problems. Where accurate historical information exists and valid relationships between variables can be established, trend analysis is a precise tool for anticipating events. Trend analysis is used to forecast market trends, sales growth, inventory levels and interest rates.

Laying the Groundwork

Business owners don't have lots of time to spend forecasting and keeping those forecasts current. While forecasting is not as urgent as managing day-to-day operations, a company needs to forecast for growth and to anticipate problems. To evaluate the effectiveness of trend analysis, you need to consider all of its components -- seasonal, cyclical and long-term trends. While promotional

discounts and clearance sales might bring in revenue in the short term, a business can't ignore long-term trends.

Trend Analysis Forecasting

Trend analysis uses a variety of statistical tools, all of which are accessible to business owners. At the most basic level, you can plot data points for visual identification of trends to clarify relationships between variables and identify “outliers,” or random points that don't fit a pattern. Data points can then be converted into moving averages to smooth random fluctuations. A business owner can use spreadsheet software to “fit” trend lines on charted data or build regression models. These allow her to include more variables to predict sales more accurately and forecast the impact of rising interest rates and seasonal changes.

Pros

With the widespread availability of data in virtually every field and the computer's capability to process it, applications for trend analysis seem almost limitless. Since a trend analysis is based on verifiable data, it can be subjected to thorough scrutiny for validation. The use of numbers makes the analysis more exacting. A trend analysis can be replicated, checked, updated and refined when necessary.

Cons

Historical data may not give a true picture of an underlying trend. An obvious event like hurricanes Katrina and Sandy will distort a normal business trend line, while others are more subtle. A major problem in forecasting trends involves identifying turning points. With hindsight, turning points are clearly visible, but it can be difficult to tell in the moment whether they are mere aberrations or the beginning of new trends. Long-term projections need more data to support them, and that may not always be available, particularly for a new business or product line. In any case, the further out one forecasts, the greater the possibility for error, because the passage of time will inevitably introduce new variables.

Manager, Forecaster & Choice of Methods

A manager generally assumes that when asking a forecaster to prepare a specific projection, the request itself provides sufficient information for the forecaster to go to work and do the job. This is almost never true.

Successful forecasting begins with collaboration between the manager and the forecaster, in which they work out answers to the following questions.

1. What is the purpose of the forecast how is it to be used? This determines the accuracy and power required of the techniques, and hence governs selection. Deciding whether to enter a business may require only a rather gross estimate of the size of the market, whereas a forecast made for budgeting purposes should be quite accurate. The appropriate techniques differ accordingly.

Again, if the forecast is to set a “standard” against which to evaluate performance, the forecasting method should not take into account special actions, such as promotions and other marketing devices, since these are meant to change historical patterns and relationships and hence form part of the “performance” to be evaluated.

Forecasts that simply sketch what the future will be like, if a company makes no significant changes in tactics and strategy are usually not good enough for planning purposes. On the other hand, if management wants a forecast of the effect that a certain marketing strategy under debate will

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have on sales growth, and then the technique must be sophisticated enough to take explicit account of the special actions and events the strategy entails.

Techniques vary in their costs, as well as in scope and accuracy. The manager must fix the level of inaccuracy he or she can tolerate in other words, decide how his or her decision will vary, depending on the range of accuracy of the forecast. This allows the forecaster to trade off cost against the value of accuracy in choosing a technique.

For example, in production and inventory control, increased accuracy is likely to lead to lower safety stocks. Here the manager and forecaster must weigh the cost of a more sophisticated and more expensive technique against potential savings in inventory costs.

Exhibit I shows how cost and accuracy increase with sophistication and charts this against the corresponding cost of forecasting errors, given some general assumptions. The most sophisticated technique that can be economically justified is one that falls in the region where the sum of the two costs is minimal.

Exhibit I Cost of Forecasting Versus Cost of Inaccuracy For a Medium-Range Forecast, Given Data Availability

Once the manager has defined the purpose of the forecast, the forecaster can advise the manager on how often it could usefully be produced. From a strategic point of view, they should discuss whether the decision to be made on the basis of the forecast can be changed later, if they find the forecast was inaccurate. If it *can* be changed, they should then discuss the usefulness of installing a system to track the accuracy of the forecast and the kind of tracking system that is appropriate.

2. *What are the dynamics and components of the system for which the forecast will be made?* This clarifies the relationships of interacting variables. Generally, the manager and the forecaster must review a flow chart that shows the relative positions of the different elements of the distribution system, sales system, production system, or whatever is being studied.

Exhibit II displays these elements for the system through which CGW's major component for color TV sets—the bulb—flows to the consumer. Note the points where inventories are required or maintained in this manufacturing and distribution system—these are the *pipeline elements*, which exert important effects throughout the flow system and hence are of critical interest to the forecaster.