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NEXT GENERATION PREDICATIVE ANALYTICS USING HP DISTRIBUTED R

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A SOLUTION IS NEEDED THAT NOT ONLY HANDLES THE VOLUME OF "BIG DATA" OR "HUGE DATA" EASILY, BUT ALSO PRODUCES INSIGHTS INTO THIS DATA QUICKLY

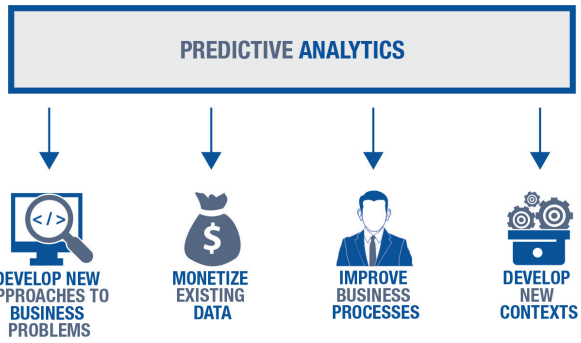
A RECENT PREDICTIVE ANALYTICS AND BIG DATA SURVEY SHOWED THAT MORE THAN HALF OF THE RESPONDENTS STRUGGLED WITH DATA INTEGRATION, PERFORMANCE, AND SCALABILITY OF THEIR ANALYTICS PLATFORM. LEARN HOW IIS IS ADDRESSING THIS PROBLEM WITH CUTTING EDGE SOLUTIONS.

The internal and external data that businesses accumulate has been exploding at a fantastic rate. This rich set of data can be leveraged to help companies gain new insights into their businesses. The goals include generating meaningful historic analytics, obtaining insight into current business operation and results, and ultimately using predictive analysis to project potential opportunities and setbacks. However, using legacy systems to accomplish these goals usually involves long hours, even days, not to mention the expense of the legacy system.

A solution is needed that not only handles the volume of "Big Data" or "Huge Data" easily but also produces insights into this data quickly. Businesses with these capabilities respond to changes in the market in a more timely and effective manner. Such solutions are now being successfully built with HP Vertica and HP Distributive R technologies.

BUSINESS ISSUES EXECUTIVES ARE TRYING TO SOLVE WITH PREDICTIVE ANALYTICS

Business executives today are using analytics to improve their business processes (such as achieving lower costs, enhancing efficiency, and improving productivity). Many forward-thinking executives are also exploring ways to use predictive analytics to develop new contexts, new approaches to their business problems, as well as novel ways to monetize their existing data. To be successful they must make these tools accessible and available as close to their frontline people as possible so the decision makers closest to the customers can adapt rapidly to changing business scenarios--and stay ahead of their competition.



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The timeframe in which the average legacy analytics architecture can produce actionable analytics just does not cut it. Granted, there may be fast legacy systems, but inherent to these are issues such as expensive proprietary software and process-laden monolithic architectures that may hold back the company's ability to innovate in this area. There are far better alternative solutions that were designed for today's huge amounts of data, and they can produce hindsight, insight, and foresight analyses of today's "Huge Data" easily and simultaneously.

THE SOLUTION: HP DISTRIBUTED R PREDICTIVE ANALYTICS

The majority of data analytics, especially those created by data scientists and statisticians today, either make use of or are based on the R language. Although this is a proven statistical modelling language, it was not designed to handle the amounts of data today's predictive analytics requires, not to mention the unstructured and semi-structured nature of a big portion of this data. With Distributed R, HP takes a proven statistical language, R, and enhances it so it can not only handle the size and variety of Big Data, but also do it at blazing speeds.

HP Distributed R:

DISTRIBUTED, MULTI-NODE DESIGN

EXECUTION OF ALGORITHMS AGAINST DATA IN MULTIPLE NODES

PROCESSING TIME DECREASED BY 50 – 1,000 TIMES

The original R Language uses a single-node design. HP Labs created Distributed R to overcome this limitation by applying a distributed, multi-node design to address the speeds required to do predictive analytics on large datasets. Instead of a linear processing algorithm on a single machine, it executes its algorithms against data in multiple nodes. Processing time can be decreased 50 times and in some cases as much as an astonishing 1,000 times. Other advantages of the HP Distributed R platform are:

- Parallel, out-of-the-box algorithms that cover data classification, clustering, ensemble modelling, regression modelling, and graph processing. The accurate results are consistent and compatible with standard R.
- Aside from being designed specifically to handle huge amounts of data, the HP Distributed R platform was developed with ease-of-use in mind. Manipulation of remote data and expression of distributed algorithms are facilitated through partitioned in-memory data storage across nodes.
- The lower learning curve, lent by HP Distributed R's compatibility with standard R and inherent user-friendly design, will also lead to easier deployment and implementation throughout the organization. This allows it to be a strategic and tactical tool.

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ALTERNATIVE SOLUTIONS CAN PRODUCE HINDSIGHT, INSIGHT, AND FORESIGHT ANALYSES OF TODAY'S "HUGE DATA"

- As open source software, businesses implementing this platform can customize the code to match company needs more closely.
- HP's participation in standard R development means that users are kept abreast with new releases and updates, as well as receive enterprise-class support for the software if problems arise.

HP Vertica boosts the benefits provided by Distributed R even further. Because both of these platforms enjoy very close integration, every form of analytics needs are addressed.

HP VERTICA BOOSTS THE BENEFITS PROVIDED BY DISTRIBUTED R EVEN FURTHER-- EVERY FORM OF ANALYTICS NEEDS ARE ADDRESSED

THE TYPICAL HAND-OFF BETWEEN HP VERTICA AND DISTRIBUTED R:

HP VERTICA INGESTS, THEN PREPARES THE DATA.

▽

THE PREPARED DATA FROM VERTICA IS USED BY HP DISTRIBUTED R TO BUILD MODELS.

▽

THESE MODELS ARE EVALUATED, THEN PASSED BACK TO VERTICA.

▽

VERTICA THEN TAKES CARE OF DEPLOYMENT AND BUSINESS INITIATIVE INTEGRATION

Overall, what makes HP Distributed R very attractive is the multithreaded computing capability, the ability to do hindsight, insight, and foresight analysis in parallel on a single platform, open-source enterprise-class supported implementation, and tight integration with HP Vertica.

BUSINESS INITIATIVES ACHIEVED WITH HP VERTICA AND DISTRIBUTED R PREDICTIVE ANALYTICS

AT&T wanted a powerful big data analytics platform that could run the workloads it uses to support the company's strategic decision making. What HP's predictive analytics platform ultimately did for them was:

HP PREDICTIVE ANALYTICS BENEFITS FOR AT&T:

- **GIVE THEM A MORE THAN 600% RETURN ON THEIR INVESTMENT.**
- PRESENT A RETURN ON THEIR INITIAL INVESTMENT WITHIN FOUR MONTHS FROM THE PLATFORM'S DEPLOYMENT.
- **CREATE ALMOST 100% INCREASE IN THE SPEED COMPLEX QUERIES WERE ANSWERED.**

Cerner, a healthcare EMR provider, wanted to enhance the quality and efficiency of patient care by boosting clinician productivity. Using HP's predictive analytics platform helped Cerner in the following ways:

HP PREDICTIVE ANALYTICS FOR CERNER:

- **ABOUT TWO MILLION ALERTS PER DAY WERE ANALYZED AND PREDICTIONS WERE MADE BASED ON THESE ALERTS, HEADING OFF POTENTIAL TROUBLE SPOTS.**
- ANALYSIS OF TIMERS BECAME 6,000 TIMES FASTER, GREATLY SHORTENING THE TIME BETWEEN IDENTIFICATION OF AREAS WHERE EFFICIENCY CAN BE IMPROVED AND IMPLEMENTATION OF THE PROPOSED IMPROVEMENTS.

These are only two use cases where HP's predictive analytics solutions helped businesses achieve their objectives. Other companies leveraging these technologies include Facebook, Guess Inc, Blue Cross, Comcast, and many more.

BUSINESS INITIATIVES ACHIEVED WITH HP VERTICA AND DISTRIBUTED R PREDICTIVE ANALYTICS

IIS IS YOUR PREDICTIVE ANALYTICS SOLUTION PROVIDER

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Enjoying the benefits of predictive analytics is not as simple as buying the package and then running it. The platform needs to be configured to address the company's business processes and initiatives. This takes experience in realistically matching what a system can do and what a business aspires to do with such a system. Aside from this, specialist expertise is necessary so implementation is focused on what objectives need to be achieved. Like any other technology these days, its lifecycle also needs to be addressed so the company's predictive analytics infrastructure stays on the cutting edge, or at least very close to it.

IIS Technology does all this by designing, building, integrating, and evolving your analytics platform in parallel with your business needs. Imagine top-of-the-line HP Vertica, HP Distributive R predictive analytics, and other such technology solutions harnessed towards meeting your business critical objectives.

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