MISY 5347: Business Intelligence & Analytics

**Q1. Provide an overview of the case.**

When it comes to critical care hemostats diagnostic equipment, Instrumentation Laboratories leads the industry. The business produces hundreds of thousands of sensors that gauge the blood sample's electrical signal.

These sensors produce millions of data records. The instrumentation laboratory faces a dilemma in that they produce a great deal of data yet lack analytical capability, which is partly caused by a lack of analytical authority.

Because of the volume and complexity of its products, which need the implementation of advanced analytics, the R&D analysts end up executing one-off studies in Minitab and go to IT departments every time they need access to test data. R&D can no longer afford to rely one IT to address the complex scenario.

They have a need for an analytic self-service platform that would enable the R&D teams to quickly access that data and troubleshoot any problems. Because their products are sensitive to environmental factors such as heat, humidity, and inconsistent materials from suppliers, they need a platform that can intelligently monitor the test data and alert R&D to any emergency issues automatically.

They have situation of supplier’s compliance with material standards, which greatly impact their products negatively.

There are other environment factors impacting their product, so it becomes a very difficult scenario trying to delineated causative factor when they run into consistency and compliance issues

Because technology is rapidly advancing, having the right analytics software can be a game-changer for maintaining market leadership.

**Q2. What were the main challenges faced by the medical device company? Were they market- or technology-driven? Explain.**

The challenges faced by the medical company are a combination of technology and the market. Instrumentation Laboratory has been a medical device company that is market-driven. Staying competitive and maintaining the status of market leader, considering the nature of the marketplace, made it important for them to always need to improve their products.

They were greatly challenged by technological limitations for their internal processes. The company had a need to implement sophisticated analytics, but technological limitations were a barrier. They practically must go to IT for help with ad hoc analysis on Minitab. They do not have an advanced analytics platform where they can perform complex analysis consistently and accurately.

**Q3. What was the proposed solution?**

The strategy for Instrumentation Laboratory was to review multiple commercial vendor-based statistical software programs to find the one that could deliver the statistical functionality and level of trust required for their environment.

Statistica became a solution for Instrumentation Laboratory because they were able to quickly build a wide range of analysis configurations on their data, which was then made available for use by analysts’ enterprise wide. This gives them the flexibility to run their canned analysis from the central office instead of having to reach out to IT for access to data or do a particular test.

Addition Statistica was far easier to use and deploy compared to their legacy solutions and comes with advanced functionality and ease of use.

**Q4. What were the results? What do you think was the real ROI?**

With Statistical across the enterprise, they now have easy access to the data analyses they need to continue their regular operations.

The company stated it saved hundreds of thousands of dollars in costs because of effective analysis and automated alerts.

The statistical analysis helped in quickly identifying formulation errors that could have resulted in a scraping product worth hundreds of thousands.

It also helped in marrying their test data with electronic device history record data, which helps them perform different correlations to determine which environmental changes are impacting some specific issues.

Statistica helped ensure their company process followed regulatory FDA standards for quality and consistency.

Statistica helped in ensuring centralized consistency and quality in the ability to set. analysis configurations, which were then used across the enterprise.

It provides leverage for the company to extend its consistency and quality standards to its suppliers to foster company standard compliance.

Statistical analysis was also saving the company a lot of time and resources; the company engineers do not have to remember to check various factors, such as glucose, a lot of time.

Looking at all the results listed above, the company was greatly improved because they saved a lot of money that ordinarily would have been lost due to their manual processes. This can be rechanneled into boosting production, and the time waste removal by statical will also be used for increased productivity, increasing the return on investment.

**Q5. What were the lessons learned? (minimum 1 page)**

Investing in the right technology can offer numerous benefits to your business.

**Increased Efficiency:** Technology can automate tasks, streamline processes, and reduce manual workloads, thus allowing your team to focus on higher-value activities.

**Enhanced Customer Experience:** By leveraging technology, businesses can offer personalized experiences, faster response times, and seamless interactions across multiple channels, leading to higher customer satisfaction and loyalty.

**Scalability**: Technology infrastructure can easily scale up or down according to business needs, allowing for flexibility and adaptability in a changing market environment.

**Competitive Advantage**: Adopting innovative technologies can differentiate your business from competitors, attract new customers, and retain existing ones by offering unique value propositions.

Risk Management and Compliance: Certain technologies can enhance security measures, quality, and consistency to ensure compliance with regulations, reducing the risk of breaches or legal issues.

**Adaptation to Industry Trends:** Investing in emerging technologies allows businesses to stay ahead of industry trends, adapt to changing consumer behaviors, and capitalize on new market opportunities before competitors.

**Cost Savings:** While there's an initial investment in technology, the long-term savings can be significant. As we have observed with Instrumentation Laboratory when they invested in Statistica,

**Improved Decision Making**: Technology provides access to data analytics and business intelligence tools that can help you make informed decisions based on real-time insights.

Overall, investing in the right technology can be a strategic move that drives growth, innovation, and sustainability for your business in the long run.