**U.V. PATEL COLLEGE OF ENGINEERING**

**Department of Computer Engineering and Information Technology**

**Subject: Big Data Analytics (2CE709)**

**LAB-2**

**Task**

Explore the impact of BIG DATA in the following listed field and summarize your study, according the questions given below.

1. Big Data in Healthcare

**Ans:** The application of big data analytics in healthcare has a lot of positive and also life-saving outcomes. Big data refers to the vast quantities of information created by the digitization of everything, that gets consolidated and analyzed by specific technologies. Applied to healthcare, it will use specific health data of a population (or of a particular individual) and potentially help to prevent epidemics, cure disease, cut down costs, etc. Doctors want to understand as much as they can about a patient and as early in their life as possible, to pick up warning signs of serious illness as they arise – treating any disease at an early stage is far more simple and less expensive. With healthcare data analytics, prevention is better than cure and managing to draw a comprehensive picture of a patient will let insurances provide a tailored package. This is the industry’s attempt to tackle the siloes problems a patient’s data has: everywhere are collected bits and bites of it and archived in hospitals, clinics, surgeries, etc., with the impossibility to communicate properly.

1. Big Data in Medicine

**Ans:** The role of big data in medicine is one where we can build better health profiles and better predictive models around individual patients so that we can better diagnose and treat disease.One of the main limitations with medicine today and in the pharmaceutical industry is our understanding of the biology of disease. Big data comes into play around aggregating more and more information around multiple scales for what constitutes a disease—from the DNA, proteins, and metabolites to cells, tissues, organs, organisms, and ecosystems. Those are the scales of the biology that we need to be modeling by integrating big data. If we do that, the models will evolve, the models will build, and they will be more predictive for given individuals.

1. Big Data in Marketing and sales

**Ans:** Increasing the quality of sales leads, improving the quality of sales lead data, improving prospecting list accuracy, territory planning, win rates and decision maker engagement strategies are all areas where big data is making a contribution to sales today.

In marketing, big data is providing insights into which content is the most effective at each stage of a sales cycle, how Investments in Customer Relationship Management (CRM) systems can be improved, in addition to strategies for increasing conversion rates, prospect engagement, conversion rates, revenue and customer lifetime value. For cloud-based enterprise software companies, big data provides insights into how to lower the Customer Acquisition Cost (CAC), Customer Lifetime Value (CLTV), and manage many other customer-driven metrics essential to running a cloud-based business.

**Questions:**

1. How data inputs help in Big Data based Customer value analytics?  
   (Big Data in Marketing and Sales)

**Ans:** Customer Value Analysis (CVA) refers to a research method that is used to identify how an organization is perceived by consumers of an organization and their competitors. The CVA is extremely important because it allows an organization to gauge how they are judged in comparison to their industry rivals. CVA is emerging as a viable series of Big Data-based technologies that accelerate sales cycles while retaining and scaling the personalized nature of customer relationships. The bottom line is that CVA is now a viable series of technologies for orchestrating excellent omnichannel customer experiences across a selling network.

1. How does Big Data help in credit risk management in financial institutions?   
   (Big Data in Marketing and Sales)

**Ans:** Credit risk refers to the probability of loss due to a borrower’s failure to make payments on any type of debt. Big Data provides greater predictive ability, since new sources of data (social media, marketing databases, etc.) allow much better predictions of user behavior and can anticipate problems with repayment or detect fraud early.

1. Why does Big Data offer the potential to transform the medicine and healthcare system?   
   (Big Data in Healthcare, Big Data in Medicine)

**Ans:** The Healthcare sector is booming at a faster rate and the necessity to manage patient care and innovate medicines has increased synonymously. With the rise in such needs, newer technologies are being adopted in the industry. One such major change that might take place in the future is the use of Big Data and Analytics in the Healthcare sector. it is found that big data is projected to grow faster in healthcare than in sectors like manufacturing, financial services or media.

Here are 5 ways in which Big Data can help and change the entire scenario of the Healthcare sector

## Health Tracking: [Big Data and Analytics](https://www.fingent.com/data-analytics-and-visualization) along with the Internet of Things (IoT), is revolutionizing the way one can track various user statistics and vitals.

1. **Reducing Cost:** Big Data can be a great way to save costs for hospitals that either over or under book staff members.
2. **Assisting High-Risk Patients:** If all the hospital records are digitized, it will be the perfect data that can be accessed to understand the pattern of many patients.
3. **Preventing Human Errors:** A lot many times it has been noted that the professionals tend to either prescribe a wrong medicine or dispatch a different medication by mistake. Such errors, in general, can be reduced since Big Data can be leveraged to analyze user data and the prescribed medication.
4. **Advancement in Healthcare Sector:** Apart from the current scenario, Big Data can be a great benefit for advancement in science and technology.
5. Describe ways of usages of Big Data analytics in marketing, sales, and advertising.  
   (Big Data in Marketing and Sales)

**Ans:** 5 ways of usages of Big Data analytics in marketing, sales, and advertising:

1. **Monitor Google Trends to Inform Your Global/Local Strategy:** Google Trends is probably the most approachable method of utilizing Big Data. Google Trends showcases trending topics by quantifying how often a particular search-term is entered relative to the total search-volume. Global marketers can use Google Trends to assess the popularity of certain topics across countries, languages, or other constituencies they might be interested in, or, stay informed on what topics are cool, hip, top-of-mind or relevant to their buyers.
2. **Use Digital Information to More Clearly Define Your ICP:** Use heaps of analytics to learn more about your target buyers than you’ve ever known before.

Whereas in years past, marketers would make educated guesses at the age, demographics, and work profile of their target buyer, modern marketers have vats of data intelligence to prove their intuitions, and shed light on a more granular level of detail, such as: which web sites a user frequents most often, which social media profiles they have and use, and even which buttons they click on a given website.

ICP (or Ideal Customer Profiles) can be extremely targeted, while also data-backed.

1. **Create Real-Time Personalization to Buyers:** Marketers need to send the right message at the right time. Timeliness and relevancy aren’t just qualities of the fourth estate; they’re also the foundation of successful marketing campaigns, email click-through rates, and consumer engagement with your brand.

Big Data gives marketers the most timely insights into who is interested or engaging with their product or content in real time.

1. **Identify the Specific Content that Moves Buyers Down the Sales Funnel:** Marketers can distill the effectiveness of a marketing push down the to tweet. Tools like content scoring illuminate which individual content assets were successful to a closed / won deal, and which were inefficient. The allows marketers to hone the strategies around the content topics or types that resonate with their buyers the most, and truly compel them to purchase.
2. **Integrate Predictive Analytics Into Your Lead Scoring Strategy:** Predictive analytics is one of the most progressive (and maybe aggressive) strategies marketers can employ with Big Data.

In particular, marketers are seeing high rates of success in predictive lead scoring, which uses a company’s base CRM(Customer Relationship Management) data and other third party Internet data to generate a model that successfully predicts future lead behavior. It pools and analyzes historical data around successful leads (leads that became closed won), thereby giving marketers clear indications about which digital behaviors are hand-raising activities or should be weighed more heavily in lead scoring.