

Big Data Usage in the Marketing Information System

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ABSTRACT

Information age, stockpiling limit, preparing power and logical limit increment had made an innovative wonder named huge information that could make huge effect on innovative work. In the advertising field, the utilization of enormous information in research can speak to a profound make a plunge buyer understandable. This article talks about the enormous information utilizes as a part of the advertising data framework and its commitment to basic leadership. It displays an amendment of principle ideas, the new conceivable outcomes of utilization and a reflection about its confinements.

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Introduction

A strong data framework is basic to get significant information for the basic leadership process in advertising. The more right and important the data is, the more prominent the likelihood of progress is. The 1990s was known as the time of the system society and the value-based information investigation [1]. Notwithstanding, notwithstanding this basic information, there is an extraordinary volume of less organized data that can be broken down, keeping in mind the end goal to discover helpful information [2]. The development of age, stockpiling limit, preparing force and information investigation gave a technological wonder called huge information. This marvel would cause incredible effects on studies and prompt the development of arrangements in various ranges. In promoting, huge information research can speak to the likelihood of a profound understanding of the shopper conduct, through their profile observing (Geo-statistic, attitudinal, conduct al), the announcement of their territories of intrigue and inclinations, and checking of their buy conduct [3] [4]. The triangulation of the accessible information continuously with data beforehand put away and dissected, would enable the age of bits of knowledge that would not be conceivable through different procedures [5]. Be that as it may, keeping in mind the end goal to have huge information, data accurately utilized by organizations, a few measures are fundamental, for example, venture on individuals capability and hardware.

More than that, the expansion of data access may create ethic-related issues, for example, attack of protection and redlining. It might influence inquire about also, as in situations where data could be utilized without assent of

the overviewed. Prescient examination are models that look to anticipate the customer conduct through information created by their buy or potentially utilization exercises and with the coming of huge information, prescient investigation, develop in significance to comprehend this conduct from the information produced in on-line collaborations among these individuals. The utilization of predictive frameworks can likewise be dubious as exemplified by the instance of American chain Target, which recognized the buy conduct of women at the beginning time of pregnancy and sent a salutation letter to a young woman who had not yet educated her folks about the pregnancy. The case produced extensive negative repercussions and the chain suspended the activity [4]. The goal of this paper is to talk about the utilization of enormous information about displaying data frameworks, exhibit new conceivable outcomes coming about because of its utilization, and consider its constraints. For that, the perspective of researchers and specialists will be investigated in view of scholarly productions, which will be examined and gone up against so we may, in this manner, construe conclusions regarding the matter.



2. The Use of Information on the Decision-Making Process in Marketing

The showcasing data framework (MIS) was characterized by Cox and Good (1967, p. 145) [6] as a progression of procedures and strategies for the standard, arranged gathering, examination and introduction of data for use in making advertising choices. For Berenson (1969, p. 16) [7], the MIS would be an intuitive structure of individuals, gear, techniques and controls, intended to make a stream of data ready to give an adequate base to the basic leadership process in showcasing. The requirement for its usage would get from focuses that have not changed yet: 1) the expansion in business multifaceted nature would request more data and better execution. The life cycle of items would be abbreviated, requiring more decisiveness from showcasing directors to collect benefits in shorter circumstances; 3) organizations would turn out to be large to the point that the absence of push to make an organized in-development framework would make its administration unrealistic; 4) business would request fast choices and thusly, keeping in mind the end goal to help basic leadership, a data framework would be fundamental for promoting regions; 5) despite the fact that a MIS isn't subject to PCs, the advances in equipment and programming advances would have spread its utilization in organizations, and not utilizing its best assets would speak to an aggressive punishment [7]. The information providing an MIS can be organized or non-organized with respect to its hunt instruments and interior (organization) or outside (miniaturized scale and full scale condition) in regards to its beginning. The work of art and most mainstream methods for arranging it is through sub-frameworks [8] -[10]. The information and preparing sub-frameworks of an MIS are the inward enrollment sub-framework (organized and interior data), promoting knowledge sub-framework (data from auxiliary sources, non-organized and from outside inceptions), and the showcasing research sub-framework (in-development from essential sources, organized, from inside or outer causes, produced from an examination question).

3. Big Data

The term huge information applies to data that could not be prepared utilizing conventional devices or procedures. Air conditioning cording to an IBM [11] report, the three attributes that would characterize enormous information are volume, speed and assortment, as together they would have made the requirement for new aptitudes and learning so as to enhance the capacity to deal with the data. The Internet and the utilization of web-based social networking have exchanged the energy of making a

substance to clients, significantly in wrinkling the age of data on the Internet. Nevertheless, this speaks to a little piece of the created in-development. Robotized sensors, for example, RFID (radio-recurrence ID), increased the volume of gathering information, and the volume of put away information on the planet is relied upon to bounce from 800,000 petabytes (PB) in 2000 to 35 zettabytes (ZB) in 2020. As indicated by IBM, Twitter would produce without anyone else's input more than 7 terabytes (TB) of information daily, while a few organizations would create terabytes of information in 60 minutes, because of its sensors and controls. With the development of sensors and innovations that empower social cooperation through compact gadgets, for example, advanced cells, the information turned out to be more mind boggling, because of its volume and diverse birthplaces and organizations, for example, documents originating from programmed control, pictures, books, audits in groups, buy information, electronic messages and perusing the information. The conventional thought of information speed would consider its recovery, in any case, because of the immense number of sensors catching data progressively, the worry with the catch and data investigation speed rises, Driving, subsequently, to the idea of stream. The catch in groups is supplanted by the gushing catch. Huge information, in this way, respects to an enormous volume of zettabytes data instead of terabytes, caught from various sources, in a few arrangements, and progressively [11]. A workable design with enormous information should mull over three principle components: 1) accumulation and joining of an awesome volume of new information for crisp bits of knowledge; 2) determination of cutting edge explanatory models so as to robotize operations and foresee consequences of business choices; and 3) formation of instruments to make an interpretation of the model yields into substantial activities and prepare key representatives to utilize these devices. Inside, the advantages of this work design would be a more noteworthy productivity of the enterprise since it would be driven by more pertinent, exact, convenient data, the more straightforwardness of the operation running, better expectation and more noteworthy speed in recreations and tests [12]. Another change exhibited by huge, information is in the responsibility for. Just legislative associations and major conventional companies possessed the immense data stockpiles. These days, new companies associated with innovation, (for example, Facebook, Google, LinkedIn) hold an incredible piece of the data on individuals, and the volume is quickly expanding. Out and out, this data makes an advanced trail for every individual and its examination can prompt the recognizable proof of their profile, inclinations and even forecast of their conduct [5].

Inside business organization, new uses for the data are recognized each day, with guarantees of benefits for operations (profitability picks up), back (control and situation, expectations), HR (enrollment and determination, pay, distinguishing proof of maintenance factors) and innovative work (virtual prototyping and reenactments). In promoting, the data on huge information can help to both enhance data quality for strategically arranging in displaying and foresee the meaning of activity programs.

4. Use of Big Data in the Marketing Information System.

4.1.1. Inside Reports

Inside reports turned out to be more total and complex, including data and measurements produced by the company's computerized decencies (counting sites and fan pages), which would likewise expand the measure of information on shoppers, coming to post the information on client profile. With the expansion of data from varying and roots and in various organizations, a wealthier interior database turns into the exploration hotspot for business, markets, customers and shopper's experiences, notwithstanding inward investigation.

4.1.2. Promoting Intelligence

On the off chance that in one hand the volume of data began from showcasing insight increments, then again, it is focused on a range with more organized hunt and checking apparatuses, with less demanding stockpiling and coordination. Perusing daily papers, magazines and area reports pick up another measurement with the entrance to worldwide data continuously, changing the test of getting to data to choice of important data, expanding, in this manner, the estimation of computerized cutting administrations. The checking of contenders has picked up another measurement since mark changes, regardless of whether nearby or worldwide, can be effectively followed up. The administrations of brand observing increment, with items, for example, GNPD by Mintel [13] and the Buzz Monitor by e. Life [14] or SCUP and Bluefin.

4.1.3. Advertising Research

Since the Internet development and virtual groups increment, contemplating on the web conduct progressed toward becoming, in the meantime, an open door and a

need. Netnography makes utilization of ethnography sources when proposing to ponder assemble conduct through the perception of their conduct in their common habitat. In such manner, ethnography (and netnography) has the normal for limiting the conduct changes, difficulties by not moving the question of concentrate from its territory, the same number of other examination bunches does. Be that as it may, scholarly distributions have not achieved a concession to system application and investigation profundity [15] -[17]. Kozinets (2002, 2006) [16] [17] proposes a profound report, in which the specialist needs to procure awesome information over the question gathering and screen it for long stretches, while Gerbera (2008) [15] isn't clear about such need of profound learning of the procedure, enabling the comprehension of that which could be like a substantial examination in view of advanced information. For the previous, similarly as ethnography, the moral issues turn out to be more imperative as the analyst ought to request authorization to screen the gathering and make their essence known; and, for the last mentioned, netnography would not require such observer introduction from open information gathered. The immense volume of information sought by interpersonal organizations could be investigated utilizing netnography.

One of the exploration methods that have been making progress in the advanced condition is the substance analyzer due to, on one hand, the immense measure of information accessible for investigation on a few subjects, and, then again, the spread of free mechanized examination apparatuses, for example, Many Eyes by IBM [18], which offers cloud assets on terms, term relationship, scores and diagrams, among others. The monstrous volume of data of huge information ace vides an awesome increment in the example, and, at times, empowers the populace look into, with "n = all" [4].

4.2. Capacity, Retrieval and Analysis

With the huge increment of the data volume and unpredictability, the capacity, recovery and investigation activi-ties are considerably more essential with enormous information. Organizations that are not set up to manage the test discover the spot in outsourcing the procedure [11]. As per Soat (2013) [19], the attribution of scores for data di-vitally accessible (e-scores) would be one of the methods for working with data from various birthplaces, including individual (information gathered from devotion projects or email messages), perusing the information gathered through threats, and outsourced information, gathered from financing foundations,

censuses, charge cards. The information investigation would empower the organization to build up the customer's profile and present prescient examinations that would control showcasing choices, for example, recognizable proof of customers with more noteworthy lifetime esteem.

4.3. Data in the Decision-Making Process in Marketing

The advertising data framework gives data to vital (structure, division and situating) and operational (promoting blend) basic leadership. The utilization of huge information in advertising will break down underneath under those points of view.

4.3.1. Division and Positioning

For Cravens and Piercy (2008) [20] , a division methodology incorporates advertise examination, distinguishing proof of the blemish ket to be sectioned, assessment on the best way to portion it, meaning of methodologies of small scale division. A market investigation can distinguish portions that are unacknowledged or underserved by the contenders. To be fruitful, a division methodology needs to look for identifiable and quantifiable, significant, available, responsive and feasible gatherings.

Situating can be comprehended as the key trademark, advantage or picture that a brand speaks to for the collective personality of the overall population [21]. It is the activity of anticipating the organization's offer or picture with the goal that it occupies an unmistakable place in the psyche of the objective open [10]. Cravens and Piercy (2008, p. 100) [20] interface the division moved to the situating through recognizable proof of important open doors inside the section. Dividing implies recognizing the portion that is deliberately essential to the organization, while situating implies possessing the coveted place in the section.

Advanced research and checking devices empower thinks about on the buyer conduct to be utilized as a part of behavioral segmentation. The task of scores and the

utilization of cutting edge examinations help to distinguish and relate factors, characterize prescient algorithmic to be utilized as a part of market dimensioning and lifetime esteem computations [19] [22]. The netnography ponders are additionally essential sources to comprehend the shopper conduct and their convictions and attitudes, giving significant data to create bits of knowledge and characterize brand and item situating.

4.3.2. Item

From the situating, the accessible data ought to be utilized to characterize the item qualities, considering the esteem made for the shopper. Data on customer inclinations and indications in groups and gatherings are contributions to the improvement and change of items, and in addition to the meaning of complementary administrations. The shopper could likewise partake in the item improvement process by offering thoughts and assessments continuously.

The advancement of development could likewise profit from enormous information, both by looking over bits of knowledge with the consumers and by utilizing the data to build up the item, or even to enhance the development procedure using data, profiting from the historical backdrop of effective items, investigations of the procedure stages or inquiries to a thought chronicle [23]. As a change to the development procedure, the investigations through huge information would empower the replication of Cooper's examinations, keeping in mind the end goal to characterize a more productive advancement process, by investigating the limit between the promoting research and the exploration in showcasing [24].

4.3.3. Circulation

Interior reports turned out to be more entire and complex, including data and measurements created by the company's computerized decencies (counting sites and fan pages), which would likewise build the measure of information on buyers, coming to past the information on client profile. With the expansion of the data from contrast, and causes and in various arrangements, a wealthier inside database turns into the exploration hotspot for business, markets, customers and purchasers bits of knowledge, notwithstanding interior examination. Notwithstanding the piercing area in the advanced condition and the observing of guest markers, leave rate, bob rate and time per page, the geolocation devices empower the checking of the purchasers' physical

location and how they drive. More than that, the market and shopper data from enormous information empowers to survey, in a more all-encompassing way, the factors that influence the choices on dissemination and area [25].

4.3.4. Correspondence

Huge information investigation empowers the development of new types of correspondence look into through the perception of how the gathering of people associates with the interpersonal organizations. From their conduct examination, new bits of knowledge of their preferences and symbols [3] may develop to characterize the ideas and modify points of interest in the battle execution. In addition, the online cooperation while showing disconnected activities of brands empowers the creation and follow up of markers to screen the correspondence [3] [26], regardless of whether quantitative or subjective. The expansion of data stockpiling, handling and accessibility empowers the utilization of the CRM idea to B2C customers, including the exercises of social occasion, preparing and investigating data on customers, giving bits of knowledge on how and why customers shop, upgrading the organization forms, encouraging the customer organization interaction, and offering access to the customer's data to any organization.

4.3.5. Cost

Indeed, even disconnected organizations will be emphatically influenced by the utilization of online costs data. An exploration by Google Shopper Marketing Council [27], distributed in April, 2013, demonstrates that 84% of American buyers counsel their cell phones while shopping in physical stores and 54% utilize them to think about costs. As per Vitorino (2013) [4], the value data accessible continuously, together with the comprehension of the buyers' creations non and components of impact (expressed feelings, remarks on encounters, perusing history, family organization, period since last buy, by conduct), joined with the utilization of prescient algorithmic would change the progression, and could, in the point of confining, give contributions to a redid basic leadership on value inevitably.

Conclusion

A recommendation for the accompanying exploration is ponder the mix of the subjective and quantitative research destinations with the utilization of enormous information and scientific frameworks in the understanding purchasers conduct and the estimation of gathering significance. If the shopper's assent in

discharging the utilization of their data would fathom the moral issues, the organizations could never have such a great amount of energy to make an incentive for their customers and buyers. Recovering the advertising application proposed in "Expanding the idea of showcasing" [35], the trading of con-sent discharge could be performed by offering a noteworthy non-financial esteem. This esteem, offer could be greater utilization of the data to produce administrations or new proposition that expansion the esteem saw by the customer [10]. Right now, numerous versatile applications offer administrations to customers, evidently for nothing out of pocket, in return for their gathering of people for ads and access to their data in informal communities. Issues with respect to the discoveries and comprehension of the customers by showcasing research are tended to subjectively. In any case, because of the volume of cases, could the investigations, through huge information, give in the meantime the comprehension on the customer and the estimation of the gatherings with this conduct?

References

- [1] Berenson, C. (1969) *Marketing Information Systems. Journal Of Marketing*, 33, 16.
[Http://Dx.Doi.Org/10.2307/1248668](http://Dx.Doi.Org/10.2307/1248668)
- [2] Biesdorf, S., Court, D. And Willmott, P. (2013) *Big Data: What's Your Plan? Mckinsey Quarterly*, 40-41.
- [3] Bughin, J., Byers, A. And Chui, M. (2011) *How Social Technologies Are Extending The Organization. Mckinsey Quarterly*, 1-10.
[Http://Bhivegroup.Com.Au/Wp-Content/Uploads/Socialtechnology.Pdf](http://Bhivegroup.Com.Au/Wp-Content/Uploads/Socialtechnology.Pdf)
- [4] Bughin, J., Livingston, J. And Marwaha, S. (2011) *Seizing The Potential Of "Big Data."* *Mckinsey...*, (October).
[Http://Whispersandshouts.Typepad.Com/Files/Using-Big-Data-To-Drive-Strategy-And-Innovation.Pdf](http://Whispersandshouts.Typepad.Com/Files/Using-Big-Data-To-Drive-Strategy-And-Innovation.Pdf)
- [5] Chiusoli, C.L. And Ikeda, A. (2010) *Sistema De Informação De Marketing (SIM): Ferramenta De Apoio Com Aplicações À Gestão Empresarial. Atlas, São Paulo.*
- [6] CONAR. *Conselho Nacional De Auto-Regulamentação Publicitária.*
[Http://Www.Conar.Org.Br/](http://Www.Conar.Org.Br/)
- [7] Cooper, R.G. (1990) *Stage-Gate Systems: A New Tool For Managing New Products*, (June).
- [8] Cox, D. And Good, R. (1967) *How To Build A Marketing Information System. Harvard Business Review*, May-June, 145-154.
[Ftp://Donnees.Admnt.Usherbrooke.Ca/Mar851/Lectures/IV](ftp://Donnees.Admnt.Usherbrooke.Ca/Mar851/Lectures/IV)
- [9] Cravens, D.W. And Piercy, N.F. (2008) *Marketing Estratégico. 8th Edition, McGraw Hill, São Paulo.*
- [10] Crescitelli, E. And Shimp, T. (2012) *Comunicação De Marketing: Integrando Propaganda, Promoção E*

- Outrs Formas De Divulgação. Cengage Learning, São Paulo.
- [11] Dadi, Sanyasinaidu. "Use Of GIS In Hydrological Investigations." *International Journal Of Multidisciplinary Advanced Research Trends*. (2015): 67. Web. <[Http's://Www.Researchgate.Net/Publication/321069487_Use_of_Gis_In_Hydrological_Investigations](http://www.researchgate.net/publication/321069487_Use_of_Gis_In_Hydrological_Investigations)>.
- [12] Dadi Sanyasinaidu. "An Imporunate Role Of GIS In Indian Retail Industry." *MAT Journals-Journal Of Remote Sensing GIS & Technology*. (2017): Web. <[Http://Www.Matjournals.In/Index.Php/JORSGT/Article/View/2110](http://www.matjournals.in/index.php/JORSGT/Article/View/2110)>.
- [13] Dadi, Sanyasinaidu. "Remote Sensing And Geographic Information System For Jungle Administration." *MAT -Matjournals-JOURNAL OF REMOTE SENSING GIS & TECHNOLOGY* (2017): Web. <[Http://Matjournals.In/Index.PHP/Joadc/Article/View/2128](http://matjournals.in/index.php/joadc/article/view/2128)>.
- [14] Dadi, Sanyasinaidu. "GIS And Remote Sensing As A Tool To Develop Applications For Natural Resource Management." *MAT -Matjournals-JOURNAL OF REMOTE SENSING GIS & TECHNOLOGY*. (2017): Web. <[Http://Www.Matjournals.In/Index.PHP/JORSGT/Article/View/2101](http://www.matjournals.in/index.php/jorsgt/article/view/2101)>.
- [15] Dadi, Sanyasinaidu. "GIS And Remote Sensing For Site Specific Farming Area Mapping." *MAT-Matjournals-Journal Of Analog And Digital Communications*. (2017): Web. <[Http://Matjournals.In/Index.PHP/Joadc/Article/View/2126](http://matjournals.in/index.php/joadc/article/view/2126)>.
- [16] Dadi, Sanyasinaidu. "Understanding The Concept Of Virtual Globe For A GIS Personnel." *International Journal Of Multidisciplinary Advanced Research Trends*. (2015): Web. <[Http://Ijmart.In/Previous-issues/Sep-2015/4.Pdf](http://ijmart.in/previous-issues/Sep-2015/4.Pdf)>.
- [17] E. Life. [Www.Elife.Com.Br](http://www.elife.com.br)
- [18] ESOMAR. [Http://Www.Esomar.Org/Utilities/News-Multimedia/Video.Php?Idvideo=57](http://www.esomar.org/utilities/news-multimedia/video.php?idvideo=57)
- [19] Genera, O.W.T. (2008) *La Netrografia: Un Método De Investigación En Internet. Cuadernos Digitals: Revista De Nuevas Tecnologías Y Sociedad*, 11. [Http://Dialnet.Unirioja.Es/Servlet/Articulo?Codigo=3100552](http://dialnet.unirioja.es/servlet/articulo?codigo=3100552)
- [20] Gobble, M.M. (2013) *Big Data: The Next Big Thing In Innovation. Research-Technology Management*, 56, 64-67. [Http://Dx.Doi.Org/10.5437/08956308X5601005](http://dx.doi.org/10.5437/08956308X5601005)
- [21] Google Shopper Marketing Agency Council (2013) *Mobile In-Store Research: How Is Store Shoppers Are Using Mobile Devices*, 37. [Http://Www.Marcresearch.Com/Pdf/Mobile_Instore_Research_Study.Pdf](http://www.marcresearch.com/pdf/mobile_instore_research_study.pdf)
- [22] [Http://Dx.Doi.Org/10.2307/1248740](http://dx.doi.org/10.2307/1248740)
- [23] Kotler, P. (1998) *Administração De Marketing*. 5th Edition, Atlas, São Paulo.
- [24] Kotler, P. And Levy, S.J. (1969) *Broadening The Concept Of Marketing. Journal Of Marketing*, 33, 10-15. [Http://Www.Ncbi.Nlm.Nih.Gov/Pubmed/12309673](http://www.ncbi.nlm.nih.gov/pubmed/12309673)
- [25] Kozinets, R. (2002) *The Field Behind The Screen: Using Netrography For Marketing Research In Online Communities. Journal Of Marketing Research*, 39, 61-72. [Http://Www.Jstor.Org/Stable/10.2307/1558584](http://www.jstor.org/stable/10.2307/1558584) [Http://Dx.Doi.Org/10.1509/Jmkr.39.1.61.18935](http://dx.doi.org/10.1509/jmkr.39.1.61.18935)
- [26] Kozinets, R.W. (2006) *Click To Connect: Netrography And Tribal Advertising. Journal Of Advertising Research*, 46, 279-288. [Http://Dx.Doi.Org/10.2501/S0021849906060338](http://dx.doi.org/10.2501/S0021849906060338)
- [27] Many Eyes. [Http://Www.Manyeyes.Com/Software/Analytics/Maneyes/](http://www.manyeyes.com/software/analytics/maneyes/)
- [28] Manyika, J., Chui, M., Brown, B. And Bughin, J. (2011) *Big Data: The Next Frontier For Innovation, Competition, And Productivity*. 146. [Www.Mckinsey.Com/Mgi](http://www.mckinsey.com/mgi)
- [29] MINTEL. [Www.Mintel.Com](http://www.mintel.com)
- [30] Nunan, D. And Domenico, M.Di. (2013) *Market Research And The Ethics Of Big Data Market Research And The Ethics Of Big Data. International Journal Of Market Research*, 55, 2-13.
- [31] ORACLE: *Big Data For Enterprise*. [Http://Www.Oracle.Com/Br/Technologies/Big-Data/Index.Html](http://www.oracle.com/br/technologies/big-data/index.html)
- [32] Parente, J. (2000) *Varejo No Brasil: Gestão E Estratégia*. Atlas, São Paulo.
- [33] Paul, J. (2012) *Big Data Takes Centre Ice. Marketing*, 30 November 2012.
- [34] Payne, A. And Frow, P. (2005) *A Strategic Framework For Customer Relationship Management. Journal Of Marketing*, 69, 167-176. [Http://Dx.Doi.Org/10.1509/Jmkg.2005.69.4.167](http://dx.doi.org/10.1509/jmkg.2005.69.4.167)
- [35] Pindyck, R.S. And Rubinfeld, D.L. (1994) *Microeconomia*. Makron Books, São Paulo.
- [36] Schultz, D. (2012) *Can Big Data Do It All?* *Marketing News*, November, 9.
- [37] Soat, M. (2013) *E-SCORES: The New Face Of Predictive Analytics. Marketing Insights*, September, 1-4.
- [38] Talbot, D. (2011) *Decoding Social Media Patterns In Tweets A Social-Media Decoder. Technology Review*, December 2011.
- [39] Vitorino, J. (2013) *Social Big Data*. São Paulo, 1-5. [Www.Elife.Com.Br](http://www.elife.com.br)
- [40] Zikopoulos, P. And Eaton, C. (2012) *Understanding Big Data: Analytics For Enterprise Class Hadoop And Streaming Data*. Mcgraw Hill, New York, 166. Retrieved From Malik, A.S., Boyko, O., Atkar, N. And Young, W.F. (2001) *A Comparative Study On MR Imaging Profile Of Titanium Pedicle Screws. Acta Radiologica*, 42, 291-293. [Http://Dx.Doi.Org/10.1080/028418501127346846](http://dx.doi.org/10.1080/028418501127346846)