ISSN 2454-9169

SURYA-THE ENERGY MANAGEMENT RESEARCH JOURNAL

(Quarterly Double Blind Peer Reviewed Referred Journal)

VOLUME - 4 | Issue - 4 | October - December 2018

Suryadatta Education Foundation's

SURYADATTA GROUP

OF EDUCATIONAL INSTITUTES (SGI - PUNE)

Editorial Board

New Subscription / Renewal

	1 Year (4 issues)
Individual / Institutions	Rs. 2000
Alumnus	Rs. 1600

Please send us your DD in favour of **Suryadatta Education Foundation,** Payable at Pune.

For inquiries, subscriptions and contributions, please write to:

The Editor
Suryadatta Group of Institutes
S.No. 342, Bavdhan, Pune - 411021
Tel.: 020-67901300 Email: support@suryadatta.edu.in

Our Other Publications

- Surya-The Energy
- Light House
- Synergy
- Sunbeam
- Spark
- Aura
- Urja
- Suryadatta Times
- Foto-Wood

ISSN 2454-9169

SURYA-THE ENERGY
Management Research Journal
(Quarterly Double Blind Peer Reviewed Referred Journal)

CONTENTS

Volume – 4 **Issue 4** **October - December 2018**

ISSN 2454-9169

Invite for paper submission
for January - March 2019 issue

The next issue of the Journal SURYA-THE ENERGY January - March 2019 would be based on non thematic topics / issues.

The length of the Research paper / Case Study / article should be between 3000 and 3500 words. It is absolutely necessary to provide the required references in the body of the text, so that the readers are informed about the sources of the data, information, views or opinions. The contributors are requested to refer to **Plagiarism Policy** which is readily available on the institutes website (www.simmc.org). Further, the author is solely responsible for the accuracy of all the figures, quotations and references. Please follow APA style of referencing.

Submit your papers to:

Prof. Dr. Anand Gaikwad
Editor
anand.gaikwad@suryadatta.edu.in

Prof. Dr. Dhananjay Awasarikar
Editor
dp.avasarikar@suryadatta.edu.in

ISSN 2454-9169

From the Desk of Chairman, Editorial Board...

Like previous issues, this issue of Synergy - A Quarterly Management Journal for the quarter October - December 2018 also contains an array of interesting articles / Research papers such as, Revenue per employee (rpe) as a metric in understanding changes in sectors of the global economy of 2017, Environmental Management : Causes, Legal provisions and Suggestions, Impact of Artificial Intelligence on Business & Education, Problems in Training & Empowering Women Entrepreneur, Study of relationship between valence and Price of selected Personal Care products among female consumers, ERP A smart solution for Business, Case Study on an Internal & External Environmental Audit of Automobile Service industry in UK using PESTEL, SWOT and Porter's Five Forces Analysis A Qualitative Study.

The Editorial Board takes the opportunity to thank all the contributors for whole heartedly extending their support through research papers and consequently in bringing out this October - December 2018 Issue.

The content and standing in all the published articles are exclusive views and personal opinions of the respective authors and they do not necessarily reflect the official views and opinions of the Editorial Board of the Institute. We hope this Issue would definitely bring innovative value addition in your existing knowledge.

Happy Reading!!

Prof. (Dr.) Sanjay B. Chordiya
Founder President & Chairman
Email : sbc27661@gmail.com

ISSN 2454-9169

THE PHILOSOPHY OF SURYADATTA

Quality Policy

Quality Policy

Suryadatta Education Foundation is committed to achieve excellence in providing Quality education through Schools (Pre-Primary, Primary, Higher Primary and Secondary Level), Junior College and Higher educational Institutes leading to Diploma, Degree, Post Graduate Diploma and Master's Degree Programs in diverse streams like Management, Information Technology, Journalism, Mass Communication, International Business, Animation, Hospitality & Tourism, Interior Designing and Fashion Designing.

Suryadatta Education Foundation aims to achieve customer satisfaction by ensuring continual enhancement in the educational systems, processes, faculty skills, quality and competence, method of teaching, assessment and learning resources so as to offer effectiveness in imparting ultimate quality education.

Our sustained belief is that our success can only be measured by consistent and continuous success of our products, the students, who in turn shape themselves into future professionals and entrepreneurs as well as responsible citizens through their contribution to research, industry, society and the nation at large.

The quality policy will be strictly adhered to and religiously implemented in the institute and shall be continually monitored at the highest level of management so as to ensure consistency in approach and effectiveness in all its dimensions.

Suryadatta Group of Institutes

ISO 9001 : 2008 Certified Institutes & Accredited by NVT-QC, ANAB & IAF

Quality of Education has always been of World-Class standards at all the Institutes belonging to 'SURYADATTA EDUCATION FOUNDATION'. This approach of ours has paid us rich dividends in the form of recognition from the student community and the Industry as well.

To enhance the quality of education, establishment and implementation of quality systems such as ISO 9001 : 2008 Accredited by NVT-QC, ANAB & IAF is a very important step adopted by our Institution towards achievement of our Vision, Mission and Objectives.

Establishment of the systems ensures consistency in the performance of the processes and satisfaction of the customer, who are the students, parents, industry and society.

SURYADATTA Group of Institutes has got the ISO certification of a leading certifying body. This is the beginning of its journey towards achieving World Class Quality Systems. Ten of the Institutes operating under the banner of SURYADATTA Group have implemented ISO 9001 : 2008 Accredited by NVT-QC, ANAB & IAF

Our Certifying Body

NVT QUALITY CERTIFICATION PVT. LTD.

CAP-1, EPIP, Near ITPL Whitefield, Bangalore - 560 066 INDIA

Website : www.nvtquality.com

ISSN 2454-9169

SURYADATTA

Revenue per employee (rpe) as a metric in understanding changes in sectors of the global economy of 2017

Ashok Benegal

Abstract:

Can revenue per employee (rpe) as a metric across sectors provide new insights as contemporary technology disrupts different sectors in a non-uniform fashion? This is examined in this paper using data from the 2017 Fortune Global 500 listing.

A recent blog on a website "priceonomics.com" examined which companies in US have the highest revenue per employee (rpe). An analysis had been done on 2016 (Standard&Poor) S&P 500 US companes which generated $ 11 trillion in combined revenues and employed 25 million people worldwide revealed that energy companies have the highest average rpe while Industrials and Consumer Discretionaries perform worst on this metric.

In that analysis technology companies performed at the lower end of the rpe spectrum. The author of the blog observed that part of the reason for this is that other companies in spaces like Energy sector (rpe in energy sector is double that of health care sector companies and almost 4 times as high as that of IT companies) and Health Care sector have large non-employee costs that technology sector companies do not have.

	10 sectors as per S&P500 US companies 2016 analysis	***Average Revenue per employee (rpe) in millions of $***
		0.321
2	Consumer Discretionaries	0.424
3	Information Technology	0.484
4	Materials	0.595
5	Technical services	0.613
6	Financials	0.654
7	Consumer staples	0.689
8	Utilities	0.813
9	Health Care	0.889
10	Energy	1.786

Prof. Ashok Benegal
MBA Faculty
SGI, Pune
Email : ashok.benegal@suryadatta.edu.in

ISSN 2454-9169

Our MBA curriculum includes a lot of content relating to international business but knowledge of specific large corporate companies in the global arena is limited because students have easier access to India-specific data like the annual ET500 listing which Economic Times publishes every year. In recent times the Fortune 500 Global companies list and Forbes 2000 Global companies list have established themselves as the two authentic sources of data on the global corporate sector. Since this data is now not as easily accessible as it used to be in earlier years, Indian MBA students have had limited access to these two popular global company lists.

However, since 2015 these lists have been made available albeit with limited fields on a Turkish (Izmir headquartered) company, Someka's website started by entrepreneurs Onur and Duygu Yilmaz who have made the subsets available in convenient and widely used Excel spreadsheet form. The data for 2017 of Fortune Global 500 from this source has been used for subsequent analysis in this paper.

Indian students will note that only seven Indian companies featured in the 2016 and 2017 Fortune Global 500 lists. Their rpe for both years are computed and made available in the following table for ready reference . In passing it may be noted that in the Forbes 2000 Global company list 58 Indian companies figure of which 12 are in the Top500. This 12 includes the seven companies from India that figure in the Fortune 500 Global list in 2016 and 2017. Unfortunately, the number of employees in the company is available only in the Fortune 500 global listing and not in the Forbes 2000 global listing.

		Revenue per employee in millions of $	***Revenue per employee in millions of $***	**Comment**
	Seven Indian cos. In Fortune 500 Global cos. List	**Rpe in 2016**	**Rpe in 2017**	
1	Indian Oil	1.58	1.53	
2	Reliance Industries	1.74	0.33	*Decline in rpe because mix of business is moving away from mostly Energy sector and now also present (via Jio) in a big way in the competitive Telecommunication sector*
3	Tata Motors	0.55	0.51	
4	State Bank of India	0.14	0.16	
5	Bharat Petroleum	2.15	2.26	
6	Hindustan Petroleum	2.74	2.7	
7	Rajesh Exports, Bangalore	0.07	0.11	*Classified as Wholesaler by Fortune mag (in jewellery export business, primarily)*

The data on rpe computed for each sector in the spreadsheets that follow,

sorted on " variation of median rpe from average rpe as a percentage of the average rpe" shows the following:

1. In low rpe sectors there is very high variation in median rpe from average rpe because the advent of technology in the form of mobile computing and Internet in general has made competition in these intense as more players adopt the newer innovations to varying degrees. This more than 50% variation is observed in
   (i) Hotels Restaurant & Leisure sector, (ii) Food Beverages & Tobacco sector and (iii) Financials sector.

2. The swing in median rpe from average rpe in the other direction is most pronounced in two sectors where technology innovations have been changing the business models adopted : media sector and transportation sector, where disruptive nature of the newer technologies has altered the game.
   In media, advertising has moved from print to visual media in large measure while In transportation sector, the supply chain innovations in leading 3rd party logistics company operations has meant a paradigm shift.

3. In more stable sectors of the economy like (i) Apparel where fashion is relatively immune to tech changes, (ii)Motor Vehicle & Parts (electric vehicles at affordable prices with "convenient to use support infrastructure in place like what has been created in 2018 in Jordan" were still a long way off in 2017), and (iii) Household Products (FMCG), the median rpe remains close to average rpe for all the companies which seem to be adopting technology at the same pace given that competition globally is cut-throat and none can risk being left behind.

4. As expected the retailers have a significantly lower rpe ($0.21 million/employee) compared to wholesalers ($ 1.14 million per employee).

	20 sectors as per Fortune500Global 2017	***Revenue per employee in millions of $***	***Revenue per employee in millions of $***	***Variation of median rpe from average as % of average***
	(Sorted by declining median rpe)	**Average**	**MEDIAN**	
1	Hotels Restaurants & Leisure	0.25	0.06	76
2	Food Beverages & Tobacco	0.78	0.33	57.7
3	Financials	1.45	0.69	52.4
4	Health Care	1.41	0.82	41.8
5	Industrials	0.44	0.27	38.6
6	Chemicals	0.87	0.63	27.6
7	Retailing	0.29	0.21	27.6
8	Technology	0.46	0.35	23.9
9	Wholesalers	1.48	1.14	23
10	Materials	0.43	0.34	20.9
11	Energy	1.48	1.18	20.3
12	Engineering & Construction	0.37	0.3	18.9
13	Telecommunications	0.49	0.4	18.4
14	Food & Drug Stores	0.34	0.28	17.6
15	Apparel	0.41	0.38	7.3
16	Motor Vehicles & Parts	0.52	0.49	5.8
17	Household Products	0.53	0.53	0
18	Aerospace & Defense	0.32	0.32	0
19	Transportation	0.27	0.28	-3.7
20	Media	0.94	1.13	-20.2

	20 sectors as per Fortune500Global 2017 *(Sorted by declining variation of median rpe from average rpe)*	Number of companies in sector	*Revenue per employee in millions of $* Average	*Revenue per employee in millions of $* MEDIAN	*Variation of median rpe from average as % of average*
1	Hotels Restaurants & Leisure	5	0.25	0.06	76
2	Food Beverages & Tobacco	17	0.78	0.33	57.7
3	Financials	113	1.45	0.69	52.4
4	Health Care	27	1.41	0.82	41.8
5	Industrials	21	0.44	0.27	38.6
6	Retailing	18	0.29	0.21	27.6
7	Chemicals	8	0.87	0.63	27.6
8	Technology	33	0.46	0.35	23.9
9	Wholesalers	23	1.48	1.14	23
10	Materials	18	0.43	0.34	20.9
11	Energy	88	1.48	1.18	20.3
12	Engineering & Construction	13	0.37	0.3	18.9
13	Telecommunications	17	0.49	0.4	18.4
14	Food & Drug Stores	20	0.34	0.28	17.6
15	Apparel	3	0.41	0.38	7.3
16	Motor Vehicles & Parts	34	0.52	0.49	5.8
17	Household Products	2	0.53	0.53	0
18	Aerospace & Defense	15	0.32	0.32	0
19	Transportation	21	0.27	0.28	-3.7
20	Media	3	0.94	1.13	-20.2
	Total # of companies	499			

Only Business Services sector with single company left out

Conclusion:

Using revenue per employee (rpe) as a metric in comparing companies within a sector and across sectors can reveal interesting facets of how individual players are adopting technology as it evolves globally.

Bibliography:

1. http://priceonomics.com/which-companies-have-the-highest-revenue-per/
2. http://www.someka.net
3. www.fortune.com/global500

ISSN 2454-9169

SURYADATTA

Environmental Management : Causes, Legal provisions and Suggestions

Shantilal Hajeri

Abstract:

Situation regarding the state of environment in India is dangerous which might reach disastrous proportions. The reasons for such an impending calamity are a burgeoning population coupled with large scale migration to cities. This migration has put unbearable strain on the already over stretched infrastructure of towns and cities. Environmental protection is an integral part of the development process and cannot be considered in isolation from it.

This paper aims at studying the challenges to protection of environment such as Water scarcity, Global warming, Air pollution, Water pollution and Noise pollution. Legal provisions in India regarding prevention of pollution will be studied in a nutshell.

Keywords:
Environment, Pollution

Introduction:

"Sustainable development is the development that meets the needs of the present without compromising the ability of the future generations to meet their own needs". The environment is a loan borrowed by the present generation from the future generation. It is the duty of the present generation to preserve and protect the environment and pass it on to the future generation without any damage to it. The nature has a strange power to protect itself if there is no human intervention with it. But the man, who is defined as a selfish animal, out of his greed is exploiting the nature. The Mother Nature has given enough to meet every body's need but that is not sufficient to meet every body's greed. Human greed to amass more wealth has lead to the exploitation of the nature.

All over the world there is concern for protection of environment. India has also passed several laws to protect the environment and to punish the guilty.

Prof. Shantilal Hajeri
SIMIR, Pune
Email : shantilal.hajeri@suryadatta.edu.in

ISSN 2454-9169

Objectives:

The objectives of this paper are

a. To study the prevailing problems of pollution
b. To study the causes of pollution
c. To study the challenges to protection of environment
d. To study the legal provisions regarding protection of environment
e. To make suggestions to the concerned persons.

Research Methodology:

The study is based on secondary data obtained from Websites, magazines, publications and books.

Limitations of the Study:

The study is done at a short notice and for the purpose of academic purpose. The study is very brief and the author has relied upon the secondary data. Readers should consider this paper for general awareness and not for taking any action based on this paper.

Data Analysis

Problems of pollution.

Environmental problems create burden for poor. The poor own a disproportionately low portion of assets. They live in number of landfills, contaminated properties, sewages and other polluting facilities. They are prone to life threatening health problems due to pollution. The poor suffer from asthma, impaired lung function and other respiratory ailments. These health conditions are caused by exposure to pollution. Underprivileged communities can also be at greater risk from severe weather developments. The Government spends huge sums on health, but the benefits don't reach the poor and needy. The poor suffer in silence and die in huge numbers without causing a flutter. They blame it on their fate.

The following are few of the important problems of pollution

a. Water pollution
b. Air Pollution
c. Noise pollution

Causes of pollution

The following are few of the important causes of Air pollution

- Increase in the number of vehicles,
- Non-effective controls on emissions,
- Combustion (of natural gas, petroleum, coal & wood in industries, automobiles, aircrafts etc.)
- Metallurgical processing (mineral dust, fumes containing fluorides, sulphides etc.)
- Chemical industries
- Processing industries(like cotton textiles, wheat flour mills)
- Welding, stone crushing etc

The following are few of the important causes of Water pollution

a) Direct and indirect addition of substances (inorganic, organic, biological) which are harmful for human use & growth of aquatic biota to water sources such as rivers, ponds, lakes, seas, dams, water canals and water storage

ISSN 2454-9169

tanks.
b) Decreasing water availability.
c) Absence of water conservation schemes
d) Lowering of water table
e) Lack of sewage and drainage facilities

The following are few of the important general causes of pollution
a. shortage of power,
b. non-availability of land for garbage disposal,
c. depletion of tree cover due to mushrooming commercial and housing complexes,
d. selected cultivation of cash crops which are water intensive,
e. destruction of trees for wood as construction material and fuel,
f. extensive degradation and salination of agricultural land
g. lack of machinery for implementing the laws to protect environment
h. corruption at Government and non Government levels.
i. greed and unhealthy competition to be rich and wealthy
j. contamination of water due to release of effluents by the industry in the rivers and seas
k. Open defection and lack of toilet facilities
l. Lack of concern for public health and environment
m. Illiteracy and lack of awareness
n. Political rivalry

Challenges to protection of environment

a) Depleting Potable Water resources

Most of the cities and towns in India are situated near water bodies like rivers, lakes and streams. These are slowly drying up or getting contaminated. Some statistics of Delhi are pointers to the present situation of water quality and availability in urban areas. Out of an average total of 3324 million litres per day of Delhi's requirement of water for domestic use the installed capacity is 2634 million litres. During the peak summer months, the shortage is 75 crore litres per day. The water table is also steadily receding. At present at Mehrauli, Najafgarh and East Delhi it is 20, 15 and 30 metres deep respectively. Almost half of the watershed area of the world's fresh water system is estimated to have been lost in the last century as land has been converted to urban use or agriculture.

b) Sewage and contamination

As regards sewage and contamination, it has been established that 1.3 billion litres of sewage is discharged into the River Yamuna every day. This holds good for other towns and cities. Out of 22 drains which spew effluents in the river, 20 have not met water quality standards. Out of 16 sewage treatment plants which were to be set up through a Supreme Court order in 1995, only 8 have been completed so far and out of these only 5 are operational (Parliament Standing Committee on Environment, reported in Times of India, 30 April 2001). In the capital, only 2 pollution monitoring stations have been set up although 19 were sanctioned four

ISSN 2454-9169

years ago.

c) Migration of people from villages to Urban areas.

Due to lack of employment opportunities in villages, every year large number of people migrate to cities in search of jobs thereby creating the pressure on the infrastructure of the cities.

d) Treatment of effluents

Most of the industries discharge pollutants in the form of liquid, solid and gas without any treatment. This results in air, water and noise pollution. Construction industry is addition to the air pollution.

e) Water borne deceases

Government expenditure on treating water-borne diseases like hepatitis, cholera, diarrhoea, dysentery takes a huge toll on the exchequer.

f) Health hazards due to air pollution

Almost all the Asian cities have airborne particulate levels twice the standards set by WHO. Vehicles have taken over industries in contributing to the air pollution load. In January, 1999 Delhi had 2.6 million vehicles and the number is increasing by 500 per day and raising the Suspended Particulate Matter (SPM) load to 5 times that of WHO norms. Poor quality fuels provided by filling stations has further aggravated the problem. SPM produced by diesel fumes, which remain in the atmosphere and can be easily inhaled, have become a major health hazard due to its carcinogenic effect. Although lead content at traffic intersections have reduced by 60% after introduction of unleaded petrol, high levels of benzene and polyaromatic hydrocarbons are cause for concern.

The statistics of emissions for the year 1996 are:

1. SPM – Kolkata 200000 tons and Delhi 116000 tons annually
2. Sulphur Dioxide – Mumbai 157000 tons and Delhi 46000 tons annually
3. Carbon Monoxide – Mumbai 470 tons, Delhi 810 tons and Kolkata 188 tons daily

Besides vehicles, thermal power plants, industries and domestic emissions contribute 16, 12 and 7% of the total air pollution load as it pertains to Delhi. Deforestation has led to loss of green cover, open defecation, moisture loss and soil textural adversities. The depletion of tree cover is responsible for high levels of dust in the air leading to diseases like bronchitis, asthma and acute respiratory infections. Pesticides in air effect the liver and cause neuropathy. Intestinal pneumonitis, chronic kidney disorder, diabetes, hypertension and atheroma in blood vessels are some of the ailments due to oxidant effect of nitrogen dioxide, presence in air of aldehydes and hydrocarbons.

g) Health hazards due to Noise pollution

Rapid industrialization, Advertisement, Public speeches and functions, Sports and cultural activities, Vehicular traffic, use of high decibel sound system during

ISSN 2454-9169

celebrations and festivals and at religious places causes noise pollution and results into deafness and other hearing related ailments like head ache.

h) Solid Waste Management

A research study carried out at Princeton University in the USA said that the country's annual solid waste, if loaded in tractor-trailors and parked one behind the other would reach half way to the moon. The total waste generation in urban areas of India is estimated to exceed 39 million tons a year by the year 2001.

The most widely used method of Municipal Solid Waste (MSW) management in India is the practice of land filling. However, landfills here are nothing but open dump yards. Uncontrolled dumping has created overflowing landfills that are not only difficult to reclaim because of the haphazard and unscientific manner of dumping, but also have serious environmental impacts such as water pollution due to leaching, methane emissions and soil degradation. Ministry of Environment and Forests has issued "Draft Rules on MSW" by a notification of 27 September, 1999, laying down all the specifications required for managing MSW.
Salient features of the document are:

Landfill construction shall be done after an environmental impact assessment (EIA) Provision for future land filling shall be included in the land use plan of the town. The landfill site shall comply with the norms for control of air and water (ground and surface) pollution and other environmental norms as per prescribed standards. Waste at disposal site shall not be burnt.

i) Electronic Waste Management

There is a rapid growth in comnputerisation, information and communication technology. Frequently new models with superior features come in the market. The people abandon their old model and buy new models. This creates a tremendous E waste which creates more health hazards.

4. Legal provisions regarding protection of environment

India is under an obligation to implement Environmental protection. Indian constitution is perhaps one of the rare constitutions of the world which contains specific provisions relating to Environmental protection. India is a signatory to many Environmental treaties.
Indian constitution Article 51 (c) provides that India shall respect International treaties and devolves duty on the citizen also to preserve the nature. Article 48 A puts duty on the state regarding the protection of Environment. Article 253 of the constitution provides for power of parliament to make law for implementing any treaty. International law, unless otherwise contrary can be construed as binding
Under this provisions, parliament enacted many laws for protection of Environment, prevention of pollution. Important legislations are

ISSN 2454-9169

as under:

a. The Water (prevention and control of pollution) Act, 1974
b. The Air (prevention and control of pollution) Act, 1981
c. The Environment (Protection) Act,1986
d. The National Environment Appellate Authority Act,1997
e. The National Environment Tribunal Act, 1995
f. The wildlife(Protection) Act, 1972
g. The Bio-Diversity Act, 2002

The Environmental Protection Act, 1986

Aims to control environmental pollution by setting up of central & state pollution control boards.

The board checks the emission & effluents by various industries.

The act encompasses pollution limit of air, water, soil & noise.

Rules have been framed under this law from time to time such as-

a) Hazredeous wastes rules,1989
b) Noise pollution rules, 2000
c) Biomedical Waste Rules, 1998
d) Recycled Plastic Manufacture & usage rule, 1999
e) Municipal Solid wastes rules,2000
f) Ozone depleting substances rules,2000

The Water (prevention and control of pollution) Act, 1974

It specifies quality of water for various purposes, ways & means to control water pollution & prevention of its effect on human health & health of other biological entities.

The Air (Prevention & Control Of Pollution) Act, 1981

This act meant for preserving quality of air, controlling air pollution & preventing effect of air pollutants. By an Amendment in 1987, noise was also recognised as an air pollution.

5. Suggestions for protection of environment

Protection of environment involves a holistic approach and understanding of issues which are best handled with the participation of all concerned. The civic agencies cannot cope up with the increasing demands for water and power supply, sanitation, sewage and waste management, etc. It also involves changing of attitudes and lifestyles, such that we minimise and reduce the impacts on environment. In order to solve these problems a concerted effort and effective strategy has to be formulated.

Suggestions for control of Water pollution

- Biodegradation of domestic sewage
- Suspended, solid particles & inorganic material can be removed by use of filter
- Industrial effluents under various treatment to lower pollutants rate
- Don't discharge waste material into water bodies
- Use of water for agriculture purpose should be minimised
- Research should be done to invent the crops requiring low water or surviving on natural rain fall.
- In industry there must be a water

ISSN 2454-9169

treatment plant

Suggestions for control of Air pollution

- Low sulphur fossil fuel
- Reduction in emissions
- Zoning of industries away from human settlements
- Destroying pollutants by thermal or catalytic combustion
- Changing pollutants to less toxic forms
- By precipitation of pollutants
- Uses natural gases like LPG
- Reduce use of wood and cow dung as fuel
- Phase out old vehicles

Suggestions for control of Noise pollution

- Use of Decibels meters
- Noise pollution control laws
- Green mufflers or green belt vegetation
- Ear plugs & ear muffs
- Prescribing permissible time for use of crackers, Loud speakers, DJs during festivals
- Prescribing permissible sound level for use of crackers Loud speakers, DJs during festivals
- Sound diversion
- Construction of ring roads and by pass roads to divert the traffic away from the city.
-

The following are the suggestions compiled from the suggestions received from various groups

- Creating awareness among general public about environment protection
- Strict implementation of provisions of environmental laws
- Prevention of corruption in implementation of laws.
- Creation of satellite townships and shifting of small scale industries from the city limits,
- Conservation of water
- Rain water harvesting
- Water shed development
- Small scale check dams,
- Creation of tanks and reservoirs
- Harvesting of water. Water harvesting should be obligatory in all new co-operative housing societies and residential plots of 500 sq. yards and above
- Storage of rainwater in lakes and depressions, abandoned quarries, paleochannels, village ponds,
- Rooftop harvesting,
- Eco-parks and ground water sanctuaries
- Treatment of effluents,
- Cleaning up of rivers, seas and other water bodies,
- Adoption of cleaner technologies to eliminate toxic effluents,
- Commercial buildings, discharging more than 10000 litres of waste water per day, should be made to install recycling systems.
- Regular, continuous monitoring and enforcement of laws.
- For domestic use, the cisterns having 12 litres capacity should be replaced by those with 5 litres capacity.
- Cleaner fuels for vehicles.
- Use of CNG
- Minimise content of benzene and sulphur, especially for diesel vehicles.
- Improve public transport system by introduction of an alternative like underground or elevated high-

ISSN 2454-9169

speed rail transit facility.
- The rail link should cover the entire area with feeder or subsidiary links to enable a commuter to reach the destination without having to transfer to road transport and vice-versa.
- Maintenance, expansion and periodic modernization of road and rail transport
- Improved traffic management by introduction of computerised traffic signalling to avoid congestion and delays at traffic intersections,
- Flyovers on major highways and bypasses at major towns and cities.
- Rigorous vehicle inspection and certification.
- Phasing out of outdated vehicles.
- Increasing of tree cover reduces dust and smog in air.
- Prevention of Deforestation

Suggestions for Solid Waste Management

Following and enforcing the norms requires cooperation from one and all. In developed countries Solid Waste Management is given high priority by way of waste minimisation, reuse, incineration with energy recovery and sanitary land filling. For example, in Sweden, energy produced from waste incineration is meeting the heating requirements of 2,50,000 apartments corresponding to a saving of 5,00,000 tons of oil annually. In India it has been estimated that there is a potential of generating about 1,000 MW of power from urban and municipal waste and about 700 MW from industrial wastes in the country. We have to employ all technologies like composting, biomethanation, pelletisation, gasification, pyrolysis, incineration, sanitary land filling and plasma arc fixed hearth process to gainfully treat Solid Waste Management and put it to use.

The different role players in Solid Waste Management should be as under:

1. Municipal Authorities – Establishing a separate Municipal Department with trained and skilled manpower for garbage collection and disposal like other utility services viz., Jal and Vidyut Boards.
2. Urban Planning Department – for allocation of suitable land for landfills and treatment plants.
3. Legal System – enforcing the "polluter pay principle" and imposing strict penal and fiscal sentences for defaulters.
4. Societal Level – for organising segregation at source, organising rag pickers for door to door collection, installing garbage processing equipment in multi-storeyed complexes and reducing waste by composting (including vermi-composting).
5. NGOs – for generating awareness and mobilising all stakeholders to pitch in to the task of solid waste management.

Efforts at International level

a. International concern for environmental protection

ISSN 2454-9169

b. International concern for Sustainable Development
c. UN conference on Human Environment and Development-Stockholm-1972
d. Result-Stockholm Declaration on the Human Environment
e. Report of the world commission on Environment and Development-1987-Brundtland Commission
f. Sustainable Development Concept
g. Cocoyoc Declaration on Environment and Development-1970

The Earth Summit:

- The United Nations conference on Environment and Development (UNCED) popularly known as Earth Summit-1992 at Rio de Janeiro- 150 Governments participated Earth summit was inspired by Brundtland report 1987 The Result of Summit-Agenda 21
- Agenda 21-a comprehensive Blue print for Global actions for Sustainable Development
- Agenda 21-a voluntary action plan
- Agenda 21-Divided into 4 sections
- Section I-Social and Economic
- Section II-Conservation and Management of Resources for Development
- Section III-Straightening the Role of Major Groups
- Section IV-Means of implementation

Conclusion:

There is a general awareness being created on the impact of environmental degradation on our day-to-day life. We understand, though a bit gradually, the need to live in harmony with nature. The importance of cleaner and greener technologies cannot be over-emphasised. All natural resources have to be harnessed in a sustainable manner to ensure the well-being of our future generations. Non Government Voluntary organizations should play an important role in creating awareness about environment protection.

Bibliography:

- The Water (prevention and control of pollution) Act, 1974
- The Air (prevention and control of pollution) Act, 1981
- The Environment (Protection) Act,1986
- Environmental Management ISSN: 0364-152X (Print) 1432-1009 (Online)

Web Sites:

https://link.springer.com/journal/267

https://en.wikipedia.org/wiki/Environmental_management_system

ISSN 2454-9169

Impact of Artificial Intelligence on Business & Education

Khushali Oza

Introduction:

Since the invention of computers or machines, their capability to perform various tasks went on growing exponentially. Humans have developed the power of computer systems in terms of their diverse working domains, their increasing speed, and reducing size with respect to time.

A branch of Computer Science named Artificial Intelligence pursues creating the computers or machines as intelligent as human beings.

What is Artificial Intelligence?

According to the father of Artificial Intelligence, John McCarthy, it is *"The science and engineering of making intelligent machines, especially intelligent computer programs".*

Artificial Intelligence is a way of **making a computer, a computer-controlled robot, or a software think intelligently,** in the similar manner the intelligent humans think.

AI is accomplished by studying how human brain thinks, and how humans learn, decide, and work while trying to solve a problem, and then using the outcomes of this study as a basis of developing intelligent software and systems.

Goals of AI

- To Create Expert Systems – The systems which exhibit intelligent behaviour, learn, demonstrate, explain, and advice its users.
- To Implement Human Intelligence in Machines – Creating systems that understand, think, learn, and behave like humans.

Applications of AI

AI has been dominant in various fields such as –

- Gaming – AI plays crucial role in strategic games such as chess, poker, tic-tac-toe, etc., where machine can think of large number of possible positions based on heuristic knowledge.

Prof. Khushali Oza
Associate Professor,
Suryadatta Institute of Management & Mass communication, Pune
Email : khushali.oza@suryadatta.edu.in

ISSN 2454-9169

- Natural Language Processing – It is possible to interact with the computer that understands natural language spoken by humans.
- Expert Systems – There are some applications which integrate machine, software, and special information to impart reasoning and advising. They provide explanation and advice to the users.
- Vision Systems – These systems understand, interpret, and comprehend visual input on the computer. For example,
  - A spying aeroplane takes photographs, which are used to figure out spatial information or map of the areas.
  - Doctors use clinical expert system to diagnose the patient.
  - Police use computer software that can recognize the face of criminal with the stored portrait made by forensic artist.
- Speech Recognition – Some intelligent systems are capable of hearing and comprehending the language in terms of sentences and their meanings while a human talks to it. It can handle different accents, slang words, noise in the background, change in human's noise due to cold, etc.
- Handwriting Recognition – The handwriting recognition software reads the text written on paper by a pen or on screen by a stylus. It can recognize the shapes of the letters and convert it into editable text.
- Intelligent Robots – Robots are able to perform the tasks given by a human. They have sensors to detect physical data from the real world such as light, heat, temperature, movement, sound, bump, and pressure. They have efficient processors, multiple sensors and huge memory, to exhibit intelligence. In addition, they are capable of learning from their mistakes and they can adapt to the new environment.

Future of Artificial Intelligence in Business & other related areas

Indian firms across diverse sectors such as healthcare, education, auto, banking and retail are increasingly tapping AI to transform their businesses. ICICI Bank, for instance, has been experimenting with robotics and AI, through which their email bot sorts out customer and distributor emails on the status of transactions and other similar things, which has helped the bank reduce its customer response time.

Most big e-tailers like Amazon India are exploring AI solutions to cut costs and overheads, and also to make their platform superior, intuitive and smart. For instance, AI is capable of learning the latest fashion trends by analysing customers' social media feeds, and can assist e-commerce firms in improving search results and recommendations.

AI has been effectively helping businesses decode patterns in their customers' online behaviour and predict the probability of a product return. Most of them are resorting to customer segmentation—leveraging customer data to create specific clusters of customers with shared

ISSN 2454-9169

attributes. This allows them to boost customer loyalty by creating more personalized, relevant marketing messages. Companies such as Flipkart have already adopted this approach to effectively gauge a customer's propensity to return a product, resulting in cost optimization. It also helps in optimizing logistics and ranking vendors based on their 'reputation'.

Agriculture:

It is expected that future of agriculture will be managed by agricultural robots. Farmers in the 3rd world countries can become the managers of their own fields. The future technology and fertilizers will need much less water with more production.

Transportation:

Some where after 2030 the self driving cars will appear for the public. By then the complete car industry will get disrupted. Most people will not own car and will use the rented car which will be available very frequently and will be giving a lot of comfort to commuting people as they can work while sitting in the rented car while going to any destination. This will result in less parking area needed which can be transformed into parks as 90-95% fewer cars will be needed. The car accidents will reduce drastically as 1.2 million accidents take place each year worldwide. That will save a million lives each year.

Motor car companies:

Most motor car companies may become bankrupt. Traditional car companies try the evolutionary approach and just build a better car while tech companies (Tesla, apple, google) may do the revolutionary approach and build computer on wheels.

Insurance companies:

Insurance companies will have massive trouble because without accidents, the insurance will become 100 times cheaper. Their car insurance business model will disappear.

Real Estate:

Real estate will change, because if you can work while you commute, people will move further away to live in more beautiful neighbourhood. Electric cars will become mainstream as result cities will be less noisy because all cars will run on electric.

Solar production:

Electricity will become incredibly cheap and clean. More solar energy will be installed worldwide. The price of solar will drop so much that all coal companies will be out of business. With cheap electricity comes cheap and abundant water.

Health:

There will be companies that will

ISSN 2454-9169

build a medical device that may work with your phone, which takes your retina scan, your blood sample and you breathe into it. It can identify nearly any disease and it will be cheap. So in few coming years everyone on this planet will have access to world class medicine with less cost.

3D printing:

The price of the cheapest 3D printers came down from $ 18000 to $ 400 within last 10 years. In the same time it became 100 times faster. All major shoe companies have started 3D printing shoes. Spare airplane parts are already 3D printed in remote airports. The space station now has a printer that eliminates the need for the large number of spare parts they used to have in the past..New smart phones will have 3D printing possibilities through which one can have 3D scan of own feet and print perfect shoe at home.. By 2050 10% of everything being produced will be 3D printed.

Role of Artificial Intelligence in education

Imagine a room full of students exploring the wreck of Titanic, watching dinosaurs walk around them, discovering the Amazon or simply landing on the moon as astronauts — what a giant leap in education?!

"We are moving away from simply 'learning' a subject or topic to 'feeling' the content. This is not simply an engagement tool or a gimmick, it allows a student to explore, to experience or to be involved in something, as if they are actually present in that environment or place,"

While we may not see humanoid robots acting as teachers within the next decade, there are many projects already in the works that use computer intelligence to help students and teachers get more out of the educational experience. Here are just a few of the ways those tools, and those that will follow them, will shape and define the educational experience of the future.

Enhances classroom teaching:

There will always be a role for teachers in education, but what that role is and what it entails may change due to new technology in the form of intelligent computing systems. As we've already discussed, AI can take over tasks like grading, can help students improve learning, and may even be a substitute for real-world tutoring. Yet AI could be adapted to many other aspects of teaching as well. AI systems could be programmed to provide expertise, serving as a place for students to ask questions and find information or could even potentially take the place of teachers for very basic course materials. In most cases, however, AI will shift the role of the teacher to that of facilitator.

Teachers will supplement AI lessons, assist students who are struggling,

ISSN 2454-9169

and provide human interaction and hands-on experiences for students. In many ways, technology is already driving some of these changes in the classroom, especially in schools that are online or embrace the flipped classroom model.

Additional support from AI tutors:

While there are obviously things that human tutors can offer that machines can't, at least not yet, the future could see more students being tutored by tutors that only exist in zeros and ones. Some tutoring programs based on artificial intelligence already exist and can help students through basic mathematics, writing, and other subjects.
These programs can teach students fundamentals, but so far aren't ideal for helping students learn high-order thinking and creativity, something that real-world teachers are still required to facilitate. Yet that shouldn't rule out the possibility of AI tutors being able to do these things in the future. With the rapid pace of technological advancement that has marked the past few decades, advanced tutoring systems may not be a pipe dream.

AI Softwares can help maintain students' records:

AI Softwares are already available to maintain the grading and attendance record of Students in College, grading homework and tests for large lecture courses can be tedious work, even when TAs split it between them. Even in lower grades, teachers often find that grading takes up a significant amount of time, time that could be used to interact with students, prepare for class, or work on professional development.

While AI may not ever be able to truly replace human grading, it's getting pretty close. It's now possible for teachers to automate grading for nearly all kinds of multiple choices and fill-in-the-blank testing and automated grading of student writing may not be far behind. Today, essay-grading software is still in its infancy and not quite up to par, yet it can (and will) improve over the coming years, allowing teachers to focus more on in-class activities and student interaction than grading.

Readily available knowledge for students

While major changes may still be a few decades in the future, the reality is that artificial intelligence has the potential to radically change just about everything we take for granted about education.

Using AI systems, software, and support, students can learn from anywhere in the world at any time, and with these kinds of programs taking the place of certain types of classroom instruction, AI may just replace teachers in some instances (for better or worse). Educational programs powered by AI are already helping students to learn basic skills, but as these programs grow and as developers learn more, they will likely

ISSN 2454-9169

offer students a much wider range of services.

Universal access to global classrooms:

Any student from any corner of the world can get access to any other school or colleges classroom teachings using AI technology which not only enhances the wide area network of the learner but also gives opportunities for every Lerner to take advantages of new leaning, knowhow and knowledge available from any corner of the world which enhances his/her confidence many folds.

Life-long and life-wide learning:

In the age of AT, leaning has become a normal and simple activity like cooking and washing at home as it gives equal opportunity to every learner to learn things at any age from any place at any time. This boosts the learners' motivation to learn new things and keep them updated.

Disadvantages:

- AI can cost a lot of money and time to build, rebuild, and repair. Robotic repair can occur to reduce time and humans needing to fix it, but that'll cost more money and resources.
- It's questionable: is it ethically and morally correct to have androids, human-like robots, or recreate intelligence, a gift of nature that shouldn't be recreated? This is a discussion about AI that's popular in the days.
- Storage is expansive, but access and retrieval may not lead to connections in memory as well as humans could.
- They can learn and get better with tasks if coded to, but it's questionable as to if this can ever become as good as humans can do such.
- They cannot work outside of what they were programmed for.
- They could never, or, at least, seemingly never with our technological perceptions, receive creativity that humans have.
- This can prevent sympathizing with emotions for human contact, such as in being nurses. This can also reduce wisdom and understanding.
- This can prevent common sense occurring. Even if coded with common sense and to learn, it seems hard for them to get as much common sense that humans could.
- Robots, with them replacing jobs, can lead to severe unemployment, unless if humans can fix the unemployment with jobs AI can't do or severely change the government to communism.
- As seen partially with smart phones and other technology already, humans can become too dependent on AI and lose their mental capacities.
- Machines can easily lead to destruction, if put in the wrong hands. That is, at least a fear of many humans.
- AI as robots can supersede humans, enslaving us.

ISSN 2454-9169

Conclusion:

It seems that we are standing at the point on the timeline where it is really difficult to foresee the future of humanity in the context of Artificial Intelligence. We always embrace new technologies which seemed to be changing our way of living. However, the important fact here is that the kind of change we are embracing must bring a positive outcome for the welfare of society and eventually of humanity. Artificial intelligence is the kind of change which we certainly should not take for granted. It is different than any other technology which humanity has ever developed and the fact which makes it unique is its ability to act autonomously. It is the change which not only starts exhibiting soon. Its positive impact on society but severely negative impacts too. So, if we are embracing it as a change which is expected to change the way we live then we should be happily ready to face the consequences whether it is related to employment, privacy, or eventually the very existence of humanity. However, whatever the case will eventually be, we certainly need a legal policy framework which can make sure to mitigate the challenges associated with AI and compensate the affected parties in case of a fatal error.

Bibliography:

- Oxford published book on "Thinking Machines" by Alexander, Igor and Burnett Piers.
- Blackwell published book on "Connection and the mind" by Bechtel, William and Abrahamsen Adele.
- MIT published book on "Artificial Intelligence in Psychology" by Boden. Margaret A
- Reddit.artificial intelligence
- Machine learning weekly
- Google news – artificial intelligence.

ISSN 2454-9169

SURYADATTA

Problems in Training & Empowering Women Entrepreneur

Dr. Harshal Salunkhe

Abstract:

Women owned businesses are highly increasing in the economies of almost all countries. The hidden entrepreneurial potentials of women have gradually been changing with the growing sensitivity to the role and economic status in the society. Skill, knowledge and adaptability in business are the main reasons for women to emerge into business ventures.' Women Entrepreneur' is a person who accepts challenging role to meet her personal needs and become economically independent. A strong desire to do something positive is an inbuilt quality of entrepreneurial women, who is capable of contributing values in both family and social life. With the advent of media, women are aware of their own traits, rights and also the work situations. The glass ceilings are shattered and women are found indulged in every line of business from pap pad to power cables. The challenges and opportunities provided to the women of digital era are growing rapidly that the job seekers are turning into job creators. They are flourishing as designers, interior decorators, exporters, publishers, garment manufacturers and still exploring new avenues of economic participation. But the Indian women entrepreneurs are facing some major constraints like – Lack of confidence, Socio-cultural barriers, Market-oriented risks, Motivational factors, Knowledge in Business Administration, Awareness about the financial assistance, Exposed to the training programs, identifying the available resources. Therefore training & empowering is essential

Keywords:
Glass ceilings, Socio-cultural barriers, Market-oriented risks, Motivational factors.

Dr. Harshal Salunkhe
Assistant Professor,
Suryadatta Institute of Management & Mass communication, Pune
Email : harshal.salunkhe@suryadatta.edu.in

Introduction:

This paper gives detail information on training and empowering women entrepreneur. It gives the answers of

ISSN 2454-9169

certain questions, for example why training and empowering women entrepreneur is essential, what is the motto behind it, how it is beneficial to family, society and country. It also explains the scenario of India as compared to other countries.

Objectives of paper:

- To evaluate the necessity of training and empowering women entrepreneur
- To focus on benefits of training and empowering women entrepreneur
- To increase level of participation of women entrepreneur

Meaning:

The term training refers to the acquisition of knowledge, skills, and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies. Training has specific goals of improving one's capability, capacity, and performance. It forms the core of apprenticeships and provides the backbone of content at institutes of technology.

Empowerment refers to increasing the spiritual, political, social or economic strength of an individual or a community. It often involves the empowered developing confidence in their own capacities.

"Women's empowerment and their full participation on the basis of equality in all spheres of society, including participation in the decision-making process and access to power, are fundamental for the achievement of equality, development and peace". Unfortunately, the approach as used by development bodies and the offered quantitative indicators tend to reduce its scope to women's ability to take individual responsibility by their own.

The indicators do not consider changes in economic and social structures, those that refer to collective empowerment, linked to social change. N. Kabeer (1992, 1994) shows that while it is important to look at the quantitative aspect, for example the number of women holding a management position in a firm or a political mandate, and this is not enough. The notion of empowerment goes further, questioning the roles of different players, men and women, within development policies; and getting people to think about:-

- conflicts and power,
- but also to examine symbolic referents and deep social structures.

All of this opens up new doors to development.

- **Empowerment process should be broken down into four levels of power:**

1. "Power over": this power involves a mutually exclusive relationship of domination or subordination. It assumes that power exists only in limited quantity. This power is exerted over someone or, less negatively, allows "someone to be guided". It triggers either passive or active resistance;

ISSN 2454-9169

2. "Power to": a power which includes the ability to make decisions, have authority, and find solutions to problems, and which can be creative and enabling. The notion therefore refers to intellectual abilities (knowledge and know-how) as well as economic means, i.e. to the ability to access and control means of production and benefit (the notion of assets);
3. "Power with": social or political power which highlights the notion of common purpose or understanding, as well as the ability to get together to negotiate and defend a common goal (individual and collective rights, political ideas such as lobbying, etc.). Collectively, people feel they have power when they can get together and unite in search of a common objective, or when they share the same vision;
4. "Power within": this notion of power refers to self-awareness, self-esteem, identity and assertiveness (knowing how to be) It refers to how individuals, through self-analysis and internal power, can influence their lives and make changes.

- **Aims of Empowerment**

1. Empowering Women aims to inspire women with the courage to break free from the chains of limiting belief patterns and societal or religious conditioning that have traditionally kept women suppressed and unable to see their true beauty and power
2. This section offers self help tools, information, encouragement and inspirational quotes and sayings for and by women to use as a guide on the journey of Reclaiming Their Power. Women are encouraged to see and bring forth the beauty and strength within themselves, to be inspired to be the best they can be, and to let their Spirit For those of you who are in challenging circumstances, the words here-in can help you find some peace and some strength to begin to turn life around.

Benefits of Empowerment:

1. As female education rises, fertility, population growth, and infant and child mortality fall and family health improves.
2. Increases in girls' secondary school enrollment are associated with increases in women's participation in the labor force and their contributions to household and national income.
3. Women's increased earning capacity, in turn, has a positive effect on child nutrition.8
4. Educated women are more politically active and better informed about their legal rights and how to exercise them.

Conclusion:

This paper concludes that training and empowering women is essential in increasing knowledge, earning capacity, potential contribution, decision-making, access to power,

ISSN 2454-9169

achievement of equality, development and peace. Improved role can be seen through training and empowering, in Indian Economy.

References:

1)Empowering Women by Farzaneh Roudi-Fahimi and Valentine M. Moghadam
3) http://www.iknowpolitics.org/es/node/5961#comment-1848
4) http://www.ipu.org/pdf/publications/wmn07-e.pdf

ISSN 2454-9169

SURYADATTA

Study of relationship between valence And Price of selected Personal Care products among female consumers

Archana Y Lahoti, Dr Poonamkumar Hinge

Abstract :

The chief purpose of this research paper is to examine in depth the phenomenon of correlation among valence and price of selected personal care products. The main product attributes such as Quality, Price, Brand, Packaging, Advertising, Promotion, affect consumer buying behavior. Research question was to what extent valence affect female consumers usage of selected skin care and hair care products. Focus group research was conducted for young females in the age group of 18-26 reveals that all young females use Skin Care products such as Face cream and Moisturizer. They use hair care products such as shampoo & Hair Oil thus indicating penetration of selected skin care and hair care products. Structured Questionnaire was prepared from standard questions of relevant literature and findings from focus group Interview. Structured Questionnaire was chosen as research instrument and distributed to female consumers of the age group between 18-26 using Random Sampling Method. 75 questionnaire were distributed using email, 40 completed questionnaire were returned and then analyzed by using correlation in MS –Excel. When valence & price for each category of the product correlated, there was very strong relationship found between price and usage of skin care and usage of hair care products respectively indicating there is strong relationship between importance of using personal care products & perceived product value indicating higher price value of the product, women perceive the product is of better quality and prefer using it.

Key Words : Correlation, Consumer Behavior

Prof. Archana Y Lahoti
Assistant Professor,
Suryadatta Institute of Management & Mass communication, Pune

Dr. Poonamkumar Hinge
Assistant Professor,
Suryadatta Institute of Management & Mass communication, Pune

Introduction:

Beauty & personal care products managed to grow annually at rate of 15-20 % despite challenging environment and demonetization which was taken by Indian Government.(Euromonitor 2016).The personal

care products (PCP) market in India is estimated to be worth ~USD 4 Bn p.a. Personal hygiene products (including bath and shower products, deodorants etc.), hair care, skin care, color cosmetics and fragrances are the key segments of the personal care market (Tata Strategic management). Product innovations, continued demand for naturally positioned products, premiumisation, disposable income, youth population and consumer willingness to experiment with new products helped drive value growth during the year.(Euromonitor 2016).

Concern about beauty and perso-nal care has become a major global trend. In that regard, a study by Nielsen in 55 countries reveals 90% of the people worldwide buy products in the health & beauty category because they value looking good (Nielsen, 2010, p.1). All over the world including India, substantial portion of the monthly budget is reserved for spending on personal care products. According to Euromonitor International's Consumers data disposable income of Indian consumer will increase from INR135,023,868 in 2016 to INR 247,095,369 in 2021. Also average expenditure of Indian consumers will increase from INR91,550,565 in 2016 to INR157, 724, 791 in 2021.

Many National & International Companies have introduced range of natural, herbal products in a various categories of personal care products .Hindustan Unilever has introduced range of products such as such as Ayush Neem shampoo, Ayush Turmeric, Citra Fair, Pol-lution Out to take care of the changing demand of the consumers.Dabur also introduced various products such as Indulekha hair oil, Dabur Vatika Oil, Dabur Badam Oil, Dabur Neem ka Tail, Dabur Amla Jasmine Oil, Dabur Gula-bari Cream, Dabur Gulabari Moisturizer, Dabur Vatika Shampoo, Dabur Vatika Hair Cream, Dabur Vatika Hair Conditioner etc. Patanjali introduced range of products such as Kesh Kanti Shampoo, Keshkanti hair oil, Saundarya Tulsi etc to satisfy the needs of Indian Consumers. Thus market place has also become more competitive with the emergence of International, National & Local players competing for their share in the market place by introducing new and innovative products as per customer's demand.

Customers are the key elements for any business. Consumers' tastes are rapidly changing. Therefore, it is essential for the marketer to thoroughly analyze consumer behavior. Consumer behavior encompasses a vast area such as consumption pattern, preferences, motivation, buying process & shopping behaviour. The purchase decision is influenced by various factors such as social, demography, economic, cultural and personal values etc. So the marketer must know the basis of decisions taken by customers. Consumer behaviour for buying personal care products differs when comes to the product, price, features, quality, packaging, lifestyle, status.

Price is one of the important determinant for the decision making.In this paper relationship

between valence and price of selected Personal Care products studied for women between the age of 18-26.
This group was selected as young people mostly follow the rhythm of fashion and taste according to the shifting time. They use Personal Care Products because that would make them feel unique about their looks and gives confidence to them.
Focus group Interviews of the group of 18-26 revealed usage of skin care products such as face cream & moisturizer & for hair care products such as shampoo & conditioner are mostly used by all the women participants.

Following data shows how Indian Personal Care Products Industry is growing

Following data shows how Indian Personal Care Products Industry is growing

Type of Market	INR	Year	Estimated Growth Rate over the period 2013-18e	Fastest Growing Segment
Skin Care	INR 62 bnin	2013	16%	Anti-ageing and fairness creams especially for men
Color Cosmetics Market	INR 17 bnin	2013	15-20%	Lip gloss and mascaras
Hair Care	INR 125 bnin	2013	30-35%	Shampoo and conditioners hair colorants and styling products
Perfumery and Deodorants Market	INR 51bnin	2013	40%	Deodorants

Table 1 : Growth of Personal care Industry

Source :Beauty& wellness Market

Review of Literature:

In the study conducted by Kisan Shivajirao Desai (2014) "A study on Consumer Buying Behaviour of Cosmetic Products in Kolhapur", finds that many factors have significant influence on buying behavior when they purchase cosmetics. Marketers must study them to satisfy consumers and improve their market share. The marketers of the cosmetic companies need to study the consumer attitude on cosmetics buying behaviour which will bring success and improved market share to the serving company. The researcher of this study emphasizes on the factors that affect the buying decisions of consumers in order to get reliable and valid results that helps to the cosmetics company for focusing on future strategies of marketing to attract more consumers therby increasing market share. (Kameswara Rao Poranki) Prialatha, P.; Mathi, K. Malar conducted a study on the purchase of personal care products by rural consumers in the Coimbatore district. The study was conducted to identify influence of various factors such as price, quality, packaging, advertising etc on the purchase of personal care products by rural consumers. The study shows that rural consumers give more importance to the 'quality' of the personal care brands they buy.

Accoridng to Mai Ngoc Khuong and Hoang Thi My Duyen, four personal factors of self-image, skin's health attention, body attraction, and age and aging process had significant effects on male consumer purchase decision.

According to Joel R. Evans and Barry Berman (2009), demographic, social and psychological factors affect the way final consumers make choices and can help a firm understand how people use the decision process. An affluent consumer would move through the process more quickly

than a middle-income one due to less financial risk. An insecure consumer would spend more time making decisions than a secure one.

Philip Kotler and Kevin Lane Keller (2007) states a consumer's buying behaviour is influenced by cultural, social, economic and personal factors. Culture, subculture and social class are more important factors which influence consumer buying behaviour. Marketing companies should study for effective implementation of Marketing Startegies Valence is Negative or positive psychological value assigned by a person to another person, event, goal, job, object, outcome, etc., based on its attractiveness to him or her. (www.businessdictionary.com/definition/valence.html)

Objectives :

1.To study the usage of personal care products for selected skin care and hair care products by female consumers of the age group 18-26
2.To analyze the relationship between valence and price value of selected skin care and hair care products by female consumers

Research Methodology :
Research Design: Qualitative Research Method followed by Quantitative Research Method

Sampling Method : Random Sampling , Yong females among age group of 18-26 were chosen
Sample Size: 40

Data Collection: Structured Questionnaire which consist of open & closed ended questions Structured Questionnaire was prepared from standard questions of relevant literature was chosen as research instrument. Focus group research reveals that young female in the age group of 18-26 mostly use Skin Care products such Face cream and Moisturizer and for Hair care products shampoo & Hair Oil are used by them

Hypothesis :

H0: There is no significant relationship between price and perceived price value of skin care products among consumer

H1: There is significant relationship between price and perceived price value of skin care products among consumer

H0: There is no significant relationship between price and perceived price value of hair care products among consumer

H1: There is significant relationship between price and perceived price value of hair care products among consumer

Data Analysis : Data was analyzed using MS-Excel Following are the results

Table 1: Users of Skin Care and Hair care Products

Skin care Products				**Hair Care Products**			
Face Cream		**Moisturizer**		**Shampoo**		**Hair Oil**	
Face	**No of**	**Moisturizer**	**No of Users**	**Shampoo**	**No of**	**Hair Oil**	**No of**
Boutique	1	Aveeno	1	Amica	1	Almond	1
Cheryl's	1	Cameon	1	Clinic Plus	1	Avon	1
Fair &	6	Cheryl's	1	Dove	11	Bajaj	7
Garnier	1	Himalaya	1	Garnier	1	Dabur	4
Himalaya	1	Joy	1	Himalaya	1	Hair care	1
Kaya	2	Kaya	1	Loreal	9	Modicare	1
Lakme	13	Lakme	3	Modicare	1	Olive Oil	1
Loreal	7	Lorreal	1	Oriflame	1	Olive of	1
Lotus	3	Nivea	12	Patanjali	9	Parachute	15
Nice	1	Oriflame	6	Pantene	1	Patanjali	5
Oriflame	2	Patanjali	7	Sunsilk	2	Vatika	3
Ponds	1	Tot Moisturizer	1	Vatika	2		
Rahul	1	Vaseline	4				
Total	**40**	**Total**	**40**	**Total**	**40**	**Total**	**40**

Following are the graphs representing above nos

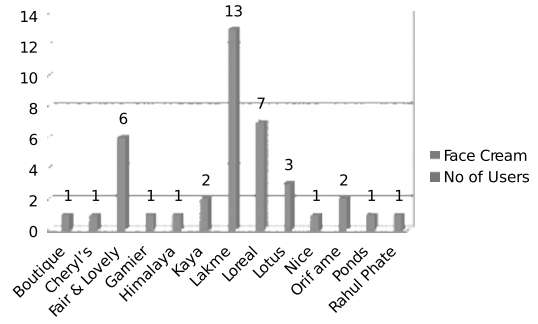


Figure 1: Users of Face Cream

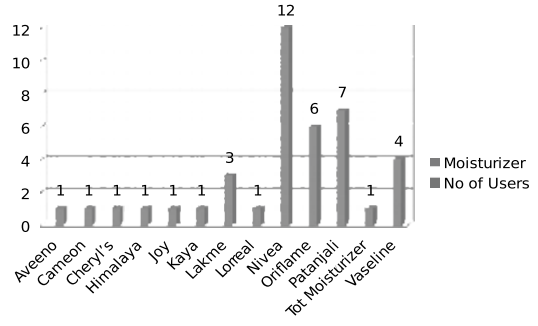


Fig 2 : Users of Moisturizer

ISSN 2454-9169

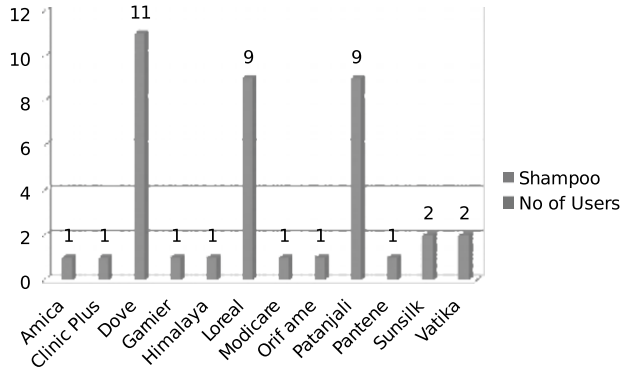


Fig 3: Users of Shampoo

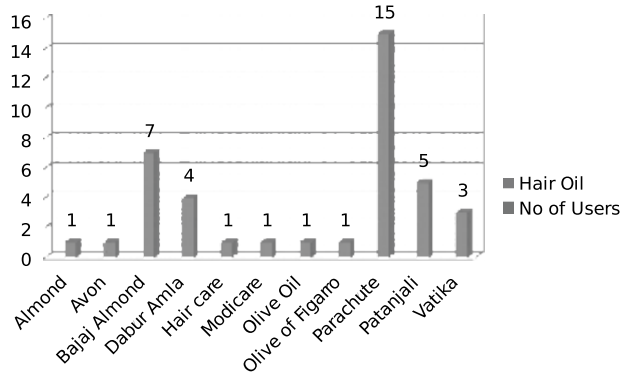


Fig 4: Users of Hair Oil

Following are the results of Price of Personal Care Products & ValencyFor Face Cream, correlation between valency & Face Cream is 0.6057852
For Moisturizer, correlation between valency & Moisturizer is 0.769238
For Shampoo, correlation between valency & Shampoo is 0.717615
For Hair Oil, correlation between valency & Hair Oil is 0. 0.715082

	Valency	Price of face Cream	Valency	Price of Moisturizer	Valency	Price of Shampoo	Valency	Price of Hair Oil
Valency	1							
Price of face Cream	**0.6057852**	1						
Valency	-0.0342539	0.156041	1					
Price of Moisturizer	-0.0782668	0.216804	**0.769238**	1				
Valency	0.1148709	-0.03916	-0.17657	-0.03005829	1			
Price of Shampoo	0.1155189	-0.01312	-0.1726	0.037481153	**0.717615**	1		
Valency	0.2181889	0.111247	-0.13187	-0.11636054	-0.0099	-0.1721544	1	
Price of Hair Oil	0.3399599	0.373273	-0.00793	-0.07716814	-0.11537	-0.2579335	**0.715082**	1

Table 2 : Corelationship between price of personal Care Products & Valency

Finding & Conclusion : All the women between age group of 18-26 are using Skin care & Hair care products. For the skin care products, for face cream most of the women prefer Lakme while for Moisturizer, most women uses Nivea.For Hair care Products, most women use Dove Shampoo followed by L'Oreal & Patanjali Kesh Kanti whereas for hair oil , most of the women use Parachute Hair Oil.

When valence & price for each category of the product correlated, there was very strong relationship found between price & skin care & hair care product indicating there is strong relationship between importance of using personal care products & perceived product value indicating higher price value, women perceive the product is of better quality.

So one can conclude that Price & Valence are very strongly correlated for Skin care & Hair care products.

Bibliography :

Kameswara Rao Poranki , Consumer Attitudes and Perception on Personal care Products and Cosmetics at Visakhapatnam, India. Research Journal of Social Science And Management,
https://www.researchgate.net/publication/288990545_Consumer_Attitudes_and_Perception_on_Personal_care_Products_and_Cosmetics_at_Visakhapatnam_India [accessed Jul 12 2018].

Dr. Nuntasaree Sukato * and Dr. Barry Elsey , "A MODEL OF MALE CONSUMER BEHAVIOUR IN BUYING SKIN CARE PRODUCTS IN THAILAND,

Vandana Gupta,"A study on Consumer perception and Brand Personality traits for making Cosmetic purchase decisions", GYANPRATHA –ACCMAN Journal of Management, Volume 5, Issue 1 2013

Prof. Siddharth Shriram Shimpi & Dr. D. K. Sinha , "Factor analysis on product attributes for Consumer buying behavior of male cosmetics in Pune City "SHIV SHAKTI International Journal in Multidisciplinary and Academic Research (SSIJMAR) Vol. 2, No. 2, March-April (ISSN 2278 –5973)

Kisan Shivajirao Desai. A study on consumer buying behaviour of cosmetic products in Kolhapur. Reviews of Literature. 2014; 1(10). ISSN:-2347-2723

Mai Ngoc Khuong and Hoang Thi My Duyen " Personal Factors affecting Consumer Purchase Decision towards Men Skin Care Product study in Vietnam", International Journal of Trade, Economics and Finance, Vol.7, No. 2, April 2016
(www.businessdictionary.com/definition/valence.html)

ISSN 2454-9169

SURYADATTA

ERP – A smart solution for Business

Dr. Archana Wafgaonkar

Abstract:

Enterprise Resource Planning is software used for business applications. It is used to manage main business processes like sales, purchasing, accounting, human resource, inventory, CRM, customer support etc. This software is an integrated system used by all the departments and can be used for any business processes. This study has been undertaken to understand ERP systems, its implementations and benefits. This research paper also gives us the idea about the limitations of ERP system.

Index Terms: Integrated, database, real time, technology, order, performance, implementation

Introduction:

ERP system helps to collect, manage, store and interpret data of various business units. It also helps in back office tasks and also aligns workflows between various departments. Proper utilization of ERP systems can lead to efficient business processes, decreasing costs as well as increasing profitability. ERP was used previously by large enterprises only to develop complex tasks. But now a day it has been used by small businesses also. Companies can modify ERP software owing to their requirements. This software can be used for pay roll, accounting, and inventory management, product planning marketing and human resource. The software also can be used for CRM and business intelligence. It also makes acute forecast of the business. Increased data security is provided with the use of firewalls. It has one central data warehouse to monitor the security.

Objectives:

1) To study the ERP systems.
2) To understand the need of implementation of ERP.
3) To find the benefits and limitations of it.

Dr. Archana Wafgaonkar
Assistant Professor,
SIBMT, Suryadatta group of Institutes, Bavdhan, Pune
Email : archana.wafgaonkar@suryadatta.edu.in

ISSN 2454-9169

4) To understand the functions and characteristics of ERP.

Research Methodology:

This is an exploratory and descriptive type of research. Secondary data has been used for this research paper. Various books, websites and magazines have been referred for this research.

The abbreviation ERP was used first by Gartner Group in 1990 to enhance the capabilities of Material Requirements Planning (MRP) as well as manufacturing resource planning. ERP systems added all major

ISSN 2454-9169

enterprise functions by mid 1990's. ERP systems included back office functions and were not supporting customer relationship management. first. ERP II was introduced by Gaartner Group in the year 2000 which was web based and extended to interact with other systems. It incorporated Supply Chain Management (SCM), Customer Relationship Management (CRM), and business intelligence and are more flexible than first generation ERPS. Developers now give the facility to open ERP systems on mobile devices.ERP covers more functions and roles including decision making, stakeholders relationships globalization, standardization and transparency.[1]

Characteristics of the ERP software:

The characteristics of ERP software are as follows:

1) Integrated system
2) Real time operation
3) Common database supporting all the applications
4) All modules with consistent look & feel
5) System installation with elaborate application and data integration
6) Deployment can be done by using options like on-premises, cloud hosted or SaaS.

The software has one centralized database to collect, store, manage and interpret data of all the departments. ERP is also used for back office work as well as interdepartmental communication. If utilized properly, the software can help in increasing efficiency, profitability by paying less cost. ERP was used by large organizations only due to the hardware cost of servers and multiple workstations, due to its complex deployment as well as upgrades and required maintenance. New technology named SaaS is used for small ERP software packages for small businesses. These modules are sold separately and the hardware and technical part is managed by the vendors. Different modules depending on the requirements are purchased by the businesses. These modules include payroll, accounting, inventory, marketing, human resource and product planning etc. CRM and business intelligence modules are also used but their price is very high. Different ERP modules currently in use are as follows –

1) NETSuite ERP – An ERP software having modules such as financial management, fixed assets, billing, inventory as well as order management.
2) Intacct – This ERP software is specially designed for retail management which covers modules such as retail and financial management, wholesale distribution etc.
3) Brightpearl – This ERP software is also retail management software which is used for inventory, accounting, customer data, order management and reporting.
4) Odoo – It is open-space and commercial software specially developed for IT development

ISSN 2454-9169

team which can be integrated with other apps like MRP, POS as well as E-commerce.

5) PeopleSoft – This is software which is owned by Oracle which is HRM focused and includes modules such as workforce forecasting and HR related business strategies. It is reliable alternative for NerSuite ERP. [2]

ERP System Features

1) Financial Operations: Automation and evaluation of accounting is done by the ERP systems. ERP can be used to carry out payroll, budgeting, billing and banking operations. Using this software cost analysis can be done to manage cash flows and for forecasting future growth. Use of ERP reduces human errors and reduces cost of operation.
2) Human Resources - ERP helps in hiring and training new employees and also can find the productivity of the employees. ERP also automates payroll processes and can send employee surveys and news and provides online community for collaboration of employees and can store policies and procedures.
3) Production and distribution: Helps manufacturing department in production control as well as synchronization of processes and quality control. ERP can also find budget of the company and accordingly can adjust processes based on cost analysis and forecasting. Along with this it can automate distribution scheduling within less time.
4) Orders and Inventory: Accepted orders from the sales department are provided to the inventory management team. Stock maintenance, also helps in locating items within the warehouse. Human errors are eliminated. [3]

Along with this features -1) security authorization – Authorized usage and security is provided by 2) referencing responsibility – which is related to tracking chain of events e.g. tracking the status of customer orders. 3) Implementation of business rules – System helps in following the rules and regulations while performing functions of the organization are the major features of ERP.

Functions of ERP:

1) Automating the processes: ERP is a online system hence it automates processes reduces manual processes saves time and money by reducing inventory management improves turnover and return on assets.
2) Enterprise Analytics: ERP gives a clear view of the financial information to monitor the business performance.
3) Integrated CRM : Many opportunities are missed by CRM without ERP. It gives clear view of the customer expectations which makes it possible to retain and service customers in an effective manner.

ISSN 2454-9169

4) Improved Mobility: ERP can be used on the mobile of an employee. He can access inventory, customer information and can process sales orders without needing access to a corporate network system. ERP improves service quality, productivity, data capture and increased competitive advantage.
5) Online Worldwide Interaction: ERP can provide web based portal to communicate with the customers 24/7 access can be provided by this portal. On line order can be placed by a customer on the portal, order can then be generated automatically by the portal, goods then will be shipped to the customer from the warehouse. [4]

Types of ERP Systems:

There are 3 types of ERP systems
1) Industry specific information ERP: This type of software gives solution to manufacturing and distribution industries. Over 70000 businesses from 200+ countries are using this ERP.
2) Web based or Cloud ERP: Some businesses need to use the data from the ERP system from anywhere and anytime. This particular ERP system helps in accessing data anywhere, anytime by storing the data on the remote computer.
3) ERP for small businesses: Small businesses can use ERP system for sales and order management. This ERP system is not for full warehouse management.[5]
4) Supply chain management systems: are also called as ERP systems. Information provided by them supports planning and shipping resources such as personnel, funds, raw materials and vehicles. [6]

ERP implementation Steps: For most of the organizations ERP package provides you with generic view of the company and its processes. While purchasing the company has to set some parameters of ERP software suiting the needs of the company. Configuration of the software package is done by disabling and enabling some features of ERP. This will provide the specific view of the company by providing the information like various plant information, different clients, company code, controlling area, storage locations etc.[7]

ERP implementation starts with enterprise modeling which defines the enterprise structure.

1) Problem identification and setting the objectives
Problem faced by the organization should be identified first. ERP should be implemented or not, what are benefits of ERP implementation is to be studied. Key performance indicators should be analyzed in order to understand the necessity of ERP. How new changes in the organization will be implemented.

2) Define scope/ team: The required modules should be defined. ERP demand list should be generated

ISSN 2454-9169

considering the budget. ERP features should be defined depending upon the necessity of the various modules.

3) Evaluate the need of required modules: Before buying the software budget and utilization of it should be considered. ERP customization and configuration should be evaluated before buying it. If the requirement of required modules is not evaluated properly the software charges will exceed the budget and the need will not be fulfilled. The organization should take efforts to bring best system in the organization.

4) Data Migration: After an ERP solution is identified; data should be migrated to the new system. Only the important and necessary data should be fed to the system and data should be retrieved only when required.

5) Check Infrastructure: The infrastructure required for implementing ERP should be checked. If required infrastructure is lacking then it will not be possible to implement ERP. The infrastructure should be supporting the software presently as well as in future. It should have the option of updating as per the demand.

6) Customization: Proper care should be taken in selecting the modules to give 100% usefulness. System should be checked for its value against the desired value of the organization. It should be checked first whether there is a need of customization. It may be the case that customization will not be needed at all.

7) Change Management: New changes are not welcomed by the employees. Employees may resist the changes in their working due to utilization of ERP system. Employees should be convinced for making use of ERP. Benefits of ERP should be explained to them. The training for the use of ERP should be given. Employees should be provided with latest updates on related development, at the same time their queries related to the software should be solved

8) Technology and knowledge Transfer: It is observed that 21% of ERP implementation cannot provide the required benefits to the organization. The reasons can be -1) incorrect software utilization 2) untrained staff operating the software. Company must choose proper vendor considering the technological aspects for purchasing ERP software. At the same time the company must provide proper training to the employees for operating the software. This would help the organization in maximum utilization and problem free operation of the software to achieve the objectives and goals of the company. It would also help the company in saving the time of the operation.

9) Project Management and Testing: Project should be implemented considering all the aspects of the project when it goes live. Project management will be a difficult task if the project is not aligned with the requirements, infrastructure and the equipment the company has. Hence project management and the testing should be done carefully.

10) Making the project live and

ISSN 2454-9169

providing maintenance: After the project implementation and training of the employees the project actually goes live. Problems are seen when actual use of the software starts. According to Panorama Research Study, 40% ERP implementations are having many operational problems when it goes live. Rigidity of the software to change according to the changes required can also be a big problem. There can be many other similar problems which should be incorporated. Hence testing is the important phase of implementation process.

For best utilization of the ERP software regular software updates and maintenance should be done by the vendor. [8]

Implementation of ERP is useful to the organization in different ways as follows:

1) Integrated functional modules
2) Supported by design engineering for better functioning
3) Order follow up till its fulfillment
4) Order execution along with receivable and credit management
5) Management of complex processes along with its interdependencies
6) Performance tracking with respect to the panned and consumed resources

Availability of resources: ERP solutions are available on UNIX and Windows NT platforms. The architecture for the system is client/server and uses object oriented technology for the design and development of the system. These packages are RDBMS based with front end tools. The major benefit of using ERP is that it provides integrated solution to the businesses. The software comes with different modules which covers the entire business operation. These modules are designed to enter, validate and analyze and for transactions of the data. ERP system implemented with some customization depending on the customer requirements. The system has modules which help in carrying out all the process functionalities necessary for the organization. For example the system provides the facility to process purchase order from ordering to bill processing. In addition it provides the required information for different departments such as purchase, stores, manufacturing, accounting and finance. All the ERP solutions provide 'Drill down' and 'context sensitive help' to use the system. Drill down helps in finding weak point in the system. Context sensitive help gives help library to give help at a particular point. Intelligent help like defining, altering and scheduling events is done by ERP systems. [9]

Limitations of ERP: There is a lot of risk in implementing ERP due to the failure in working and needed cost of purchase and maintenance. Many companies have experienced total damage to their business due to failure of ERP system. Major businesses processes and information systems failed or were

ISSN 2454-9169

not functioning properly due to failure of ERP systems. It further resulted in big losses in revenue, market shares as well as profits. Businesses lost their shipments and orders. Record of inventory was not maintained properly.

Trends in the evolution of ERP system: There are four new trends that have come up with the ERP system – 1) Flexible ERP – Modified according to user needs 2) Web – Enabled ERP – Available on the web and can make communication between the company people easy also can improve communication of the management with its stakeholders easy. 3) Inter enterprise ERP – This trend helps in improving internal communication of the organizations easy. 4) e-Business Suits – This has helped in integrating different modules of ERP and also helps in customer relationship management, supply chain management. It also helps in procurement, decision support as well as enterprise portals and other business functions and applications etc.[10]

ERP Market : ERP companies like SAP, PeopleSoft, Oracle and BaaN have obtained more than 20% growth in revenues ERP systems are classified on the basis of vision and quality offered by them. According to survey report by IDC & IMA (USA), SAP and Oracle are the most popular ERP suppliers at present. There are 10 most popular ERP software packages, some amongst them are- 1) PeopleSoft 2) Oracle 3) MFG/PRO 4) BaaN 5) SSA 6) IFS 7) Ramco. they have captured almost 48% of the total market. SAP pioneered ERP. R/3 systems of SAP can be easily integrated with company's own systems. This software is available in 24 languages & has obtained good market share. [11]

Reasons for buying ERP: There are various reasons why people buy ERP software. They are as follows –

- Managerial initiatives: Managerial initiatives are of three types – 1) Strategic initiatives – needed capability for the global business and to survive in the competition. 2) Operational initiative – This is necessary for performance and cost improvements by integration. 3) Organizational initiative – To implement new organizational change for the betterment of the company. .
- Technology Initiative – From supporting tool to strategic competitive tool.
- Effectiveness of the business: For improving customer service 2) Fast product development 3) Information availability for taking decisions on cost and profitability. 4) To add new functionality to business. 5) Enabler of organizational renewals. Etc 6) For responding to new changes in the business.[12]

ISSN 2454-9169

Findings:

- If utilized properly, the software can help in increasing efficiency, profitability by paying less cost.
- ERP is a online system hence it automates processes reduces manual processes saves time and money
- Improves turnover and return on assets.
- ERP improves service quality, productivity, data capture and increased competitive advantage.
- ERP can provide web based portal to communicate with the customers 24/7 access.
- If utilized properly ERP can be most beneficial to the businesses.
- If ERP implementation is not done properly it can result in losses of revenue, market shares and profits to the businesses.

Conclusion:

ERP software can be used by businesses for technology enhancement, information availability, adding new functionality as well as for decision making, to make new organizational change as well as to improve capability of global business to survive in the competition.

If proper implementation of the ERP system is done the business can be benefited by gaining profits, market shares as well as revenue. If the ERP system is not implemented by aligning it functions and workflows of the company it can lead to total loss in terms of shipments and orders. Inventory record will not be maintained properly. The collaboration between the organizations would fail.

Bibliography:

- https:// en.wikipedia.org/wiki/Enterprise_resource_planning
- https://financesonline.com/erp-software-analysis-features-types-benefits-pricing/
- https://selecthub.com/enterprise-resource-planning/erp-examples-features-platforms/
- https://www.markinson.com.au/company/blog/5-erp-functions-to-improve-your-business-processes/
- https://www.quora.com/What-are-the-types-of-ERP-Systems
- Effy OZ, Management Information System, India Edition, 2006, Course Technology, A part of Cengage Learning
- https:// en.wikipedia.org/wiki/Enterprise_resource_planning
- http://www.skywardtechno.com/blog/erp-implementation-steps/
- Waman S. Jawadekar, Management Information System,2009 Edition, Chapter 15,Enterprise Management System, Text and cases, A digital Firm Perspective, Tata McGraw Hill Education Private Limited

ISSN 2454-9169

- Jems A O'Brien, George M. Marakas, Management Information System, chapter 8, Enterprise Business Applications,Year 2006, Tata Mcgraw Hill Publishing Companies Ltd. New Delhi

- Mahadeo Jaiswal, Monika Mital, Management Information Systems, Chaper 7, Enterprise Information Systems,year 2007,Oxford Higher Education, New York

- Prithwis Mukerjee, Business Information systems, System Engineering for Business Managers, Year 2010, Jaico Publishing House, Mumbai

ISSN 2454-9169

Case Study on an Internal & External Environmental Audit of Automobile Service industry in UK using PESTEL, SWOT and Porter's Five Forces Analysis

Kirti Bhatia

Definition & Its Study Analysis

PESTEL stands for Political, Economical, Social, Technological, Environmental and Legal and Forms of Analysis of the macro-environment of the organization.

Political Factors

- Politico-Globalised stability
- Peer groups influence
- Interventions by the Government.
- Administrative barriers
- Inter-political relationships
- The foreign ownership regulations and the market expansion mode
- Advancements and up gradations in existing influential politico-economic blocks
- The change of political programme of party in power
- Government's golden share
- British industry highly unionized, major stakeholders

Economic Factors

- The target market size, maturity and the growth potential
- Era of Economic Development
- Currency stability
- Emergence of new markets
- New economic blocks and union cost
- Price of the oil
- Interest rates low
- Improvements in Standard of living
- Low capital costs
- Exchange rate fluctuations
- Capital intensiveness
- Legal formalities

Social Factors

- Demographic changes
- Fashion cycles and style statements (demand curve for SUV)
- Psychographic parameters

Ms. Kirti Bhatia
NIMS University, Jaipur

- Inter-Country Cultural differences
- Literacy rate
- Leisure interests and activities
- Awareness and growth parameters

Technological Factors

- Car manufacturers with explicitly exploiting technical/engineering advantages
- Availability of technological innovations (falling) in the domain of competitors
- Technological diversification
- The development and demand of new Supply chain collaborations
- Techno-ability of operational country
- The influence of techno-commercial improvements on product life cycle
- The techno-distribution collision
- Diffusion rate of pioneering products and goods manufactured
- The concentration of technological spillages
- Awareness about technological feasibility
- Internet world
- Era of Globalization

Environmental Factors

- High demand of eco- friendly automobiles.
- Awareness and concern towards the environment
- Low costs of environmental friendly cars
- Environmental laws
- New emission standards in UK

Legal Factors

- Legislation move in UK
- Higher demand of luxury cars in Japan (opening up)
- Labor intensified laws

Porter's Five Forces

The analysis of micro forces (Porters' five forces)

Competitors' bargaining power and Competitive Rivalry:

- Lower chances in UK
- Influential effect on various parts of demography
- Product differentiation and price wars
- The continuous shift of market power by the parties in competition (industry alliances, joint ventures, industry consolidation)
- Influence of various cultures
- Consumer trends (niche markets)
- Market fragmentation and differentiation
- Increasing promotional and R&D, propagation of models and segments, overcapacity, significant price pressure, highly demanding customers and market innovations
- Saturation in the market
- Higher demand of profits by shareholders

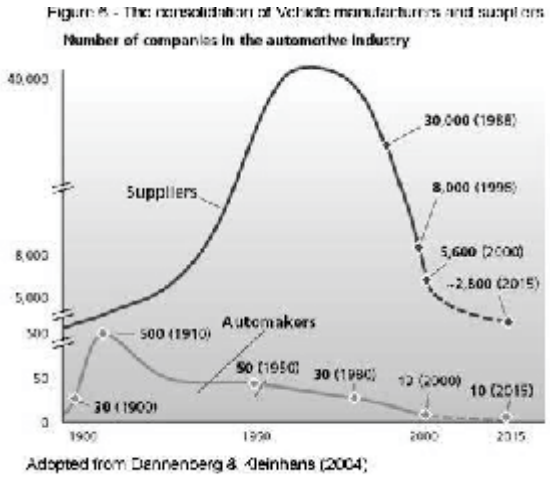
Buyer's bargaining power

- Higher demand of excellence in terms of brand, quality, low price, after sales-service
- Acquisitions lead to horizontal integration
- Higher intensified globalised competition and increase in overcapacity in markets
- Presence of informative channels and service providers

- Style statement of branded, wealthy SUV and luxurious cars

Suppliers' bargaining power

- The consolidation in this sector has led to and impacted the further consolidations of supplier groups: specially 1st, 2nd and 3rd tiers
- Joint venture with GKN Snaky to produce body pressings instead of buying from Rover - Backward integration
- Reduction of the number of vehicle manufacturers has immediately reflected on the number of suppliers. (Fig)



Adopted from Dannenberg & Kleinhans (2004)

- Intensified competition and rivalry, market with over-ability of component makers and suppliers
- Hence, bargaining power balance and higher quality through techno-innovative requirements and urge in well-collaborative behaviour. (No compulsive attitude)

The Threat and Higher Demand of Substitutes

- Various modes of transportation
- Higher Volume of car manufacturers.
- Customers approaches towards fashion statements and styles.
- Threat from public vehicles, transport services.
- Rising voice of customers about environmental issues and their concern.
- Direct transportation and usage of public utility vehicles (public transportation)
- Lesser awareness about luxury cars, poor purchasing power of customers

Threat of New Entrants

- Potential entrants: Japanese
- Economies of Scale: The current manufacturers and players enjoy large economies of scale and there is higher investment and higher chances of barriers in exit
- Product differentiation: Customers preferences for other variants
- Capital requirements: Capital intensified
- Access to distribution channels: Higher access of up gradation in distribution channels. Difficulty by Jaguar in Germany, secured Saibu in Japan

SWOT Analysis

Strengths:

- Accommodating to the Quality / culture identity of the brand
- Well cultured history (Pre- historic Years)
- Image branding
- Re-entry into international sports and vintage car races

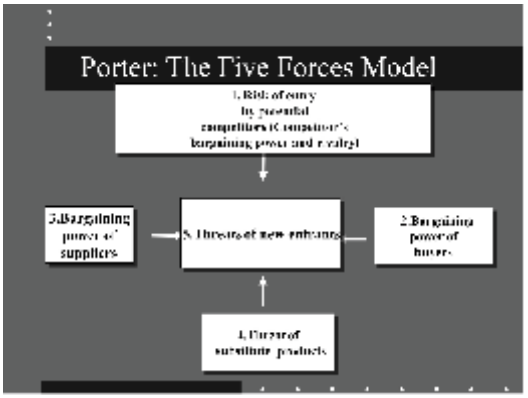
- Value added Supply Chain Management
- Highly advanced channels of distribution
- Long history of Jaguar's brand
- Higher operational and capability scale

Weaknesses:
- Less capital intensive for marketing activities
- Lack of clarity regarding the role of Pacific Alliance Group (PAG) in the strategy of Jaguar
- Issues in Brand -Positioning
- Higher questions raising for quality
- Other upcoming brands
- Shortcomings in Engineering / R&D
- Concerns in Labor-unions
- Poor networking
- Inability and incapability of Jaguar to become a change agent in designing of cars
- Disadvantaged and highly dissatisfied economies of scale

Opportunities:
- Expansion in Asia Pacific markets and UK luxury and SUV cars' market.
- Creation of synergy and cost sharing
- Era of Economization
- Entering in Japanese, Chinese and Korean markets
- Techno-commercial innovations and their availability
- US$ exchange rate vis-à-vis Pound
- Competitive advantage

Threats:
- Competition from Mercedes, Porsche & BMW
- Entrants by Japanese sector
- Substitutes of smaller vehicles
- Fluctuations in exchange rates
- Labor legislation in UK
- Environmental pressures and concern
- Threats from potential brands
- Capital intensiveness
- The reduction of demand for various models of Jaguar in UK
- Liquidity issues and the heavy developmental investment requirements
- Changing consumer preferences, styles, moods and trends
- Consumer adapting to existing brands and brand recovery on slower pace
- Shareholders' disapproval of Jaguar's capacity

Conclusion:
- Hence, in case of Jaguar the decision of locating the operations shall be driven not by the bargaining power criteria, but the ability of suppliers to collaborate. The current technological forces reinforce the argument for this approach.



Suryadatta - The Temple of Learning

The Suryadatta Education Foundation, SEF, is a charitable trust registered with the Registrar of Societies, Government of Maharashtra. The Suryadatta Group of Institutes was established in the year 1999, with the blessings of Late Shri Bansilalji & Smt. Ratanbai Chordiya.

The Suryadatta family has blossomed into a bouquet of academic institutions in various disciplines such as Information Technology, Management, Media and Mass Communication, Hospitality Management, Interior Designing, Fashion Designing, Retail, IT Enabled Services, Creative Arts, Vocational, Advanced Studies, Junior College, CBSE School. Suryadatta has students from many countries and from all parts of India pursuing their education in different streams at various Suryadatta Institutions. Each Institute of the Group is strategically located in the heart of the city and has a dedicated campus providing enlightening and inspiring, academic ambience. Each Institute is spearheaded by well qualified, experienced and dedicated Directors / Principals. The faculty is a rich Academic-Industry mix, many having International exposure.

The ethos of Suryadatta is "Enlightening and Disseminating Knowledge for Prosperity" " kœZ[ZYV H ë_fl..."

The Suryadatta Education Foundation runs the following professional & voluntary educational institutions:

- **Suryadatta Institute of Management & Mass Communication (SIMMC)**
- **Suryadatta Institute of Business Management & Technology (SIBMT)**
- **Suryadatta Institute of Management & Information Research (SIMIR)**
- **Suryadatta College of Management, Information Research & Technology (SCMIRT)**
- **Suryadatta College of Hospitality Management & Travel Tourism (SCHMTT)**
- **Pune Institute of Applied Technology (PIAT)**
- **Suryadatta Institute of Vocational and Advanced Studies (SIVAS)**
- **SIVAS - Suryadatta Institute of Fashion Technology (SIFT)**
- **SIVAS - Suryadatta School of Hotel Management (SSHM)**
- **Surya - Kids**
- **Suryadatta National School (SNS)**
- **Suryadatta Junior College (SJC)**
- **Suryadatta Public School (SPS)**
- **Suryadatta Institute of Mass Communication & Event Management (SIMCEM)**
- **Suryadatta Institute of Design (SID)**
- **Suryadatta Research Centre (SRC)**
- **Suryadatta Institute of Entrepreneurship & Skill Development (SIESD)**

Suryadatta Group's Edu-Socio Connect Initiative, started with the inspiration & blessings of Late Smt Ratanbai & Shri Bansilalji Chordiya, offers various voluntary skill based modules, awareness programs & free of cost education to the needy, deserving, economically deprived strata of the society, farmers, members of the Armed Forces, Public Servants, loyal employees of the organization and to devang children through :

- **Suryadatta Institute of Computer Technology (SICT)**
- **Suryadatta Institute of English & Foreign Languages (SIEFL)**
- **Suryadatta Institute of Rehabilitation of Special Children (SIRSC)**
- **Suryadatta Fitness & Sports Academy (SFSA)**
- **Suryadatta Institute of Health Sciences (SIHS)**
- **Suryadatta Global Finishing School (SGFS)**
- **Suryadatta International Aviation & Tourism Academy (SIATA)**
- **Suryadatta Institute of Beauty & Wellness (SIBW)**
- **Suryadatta Centre for Skill Development & CSR (SCSDR)**
- **Suryadatta International Self Defense Academy (SISDA)**
- **Suryadatta Institute of Corporate Studies (SICS)**
- **Suryadatta College of Management & Information Technology (SCMIT)**
- **Suryadatta International Institute of Lifestyle Management (SIILM)**
- **Suryadatta Institute for Banking and Finance (SIBF)**
- **Suryadatta Institute for Career Development (SICD)**
- **Suryadatta Institute of Graphics Multimedia & Animation (SIGMA)**
- **Suryadatta Global Rehabilitation Center for Deaddiction (SGRCD)**

SURYADATTA • Pioneer in developing industry ready professionals

Estd. 1999

Suryadatta Group
Enriching Careers
& Enhancing Lives

Suryadatta Education Foundations

SURYADATTA® GROUP OF INSTITUTES

● **Registered Office** ●

2074, Sadashiv Peth, Off. Tilak Road, Pune - 411 030, Maharashtra, INDIA

● **Bavdhan, Pune Campus** ●

Sr. No. 342, Bavdhan, Pune 411021, Maharashtra, INDIA

Tel No.: 020-67901300, 9763266829 **Fax No.:** 020-67901333

Email : support@suryadatta.edu.in **Website :** www.suryadatta.org

A
Category B-Schools
All India
17 Consecutive years
Leading National Surveys

B-School of
International Repute