

Save Paper - An Eco-Friendly Research

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Abstract --Environment conscious global production and consumption stress on carbon emissions involved in paper manufacture. Each A4-size sheet of paper consumes over 15 litres of water in its manufacture. The article is an effort to identify and reduce paper consumption in the domain of public life and academics. The article relies on information technology networks to improve an organization's internal capability in reducing paper consumption. Minimal use of paper and use of technology to become a business strategy to achieve a carbon neutral global society.

Keywords: Excel spreadsheet, Short message service, Email, Saving paper

I. INTRODUCTION

COLLABORATIVE–distributed IT networks is the 21st century method of production and services [1]. Smart organizations integrate information and communication technologies, knowledge and organizational networks to form the operational basis, for productivity gains in evolving value chains [1]. An organization's internal capability analysis provides an insight into strengths and core skills of the organization, besides identifying relevant course of action, for business strategy change [2]. The paper proposes an internal strategy to deploy emails, SMS and excel spreadsheets, among various public bodies of society.

II. LITERATURE SURVEY

The concept of Short message service started in 1984 and its technical standard evolved till 2005 [3]. In September 1985, GSM 02.03-Teleservices supported by a GSM Public Land mobile Network, the maximum message length was estimated to be 128 bytes, at a transmission of about 146 characters using 7 bits per character of International Alphabet No.5 [3]. In April 1986, GSM02.03 was updated with preliminary parameters viz. maximum message length 100 characters, 99.5 percent probability of correct message reception, and a maximum transmission delay of 10 seconds [3]. Email marketing and campaign is a cost-effective way to business success in today's challenging economic times, for maximized delivery rate of a professional communication [4]. The concept of email dates back to 1970s to ARPANET, for communications back and forth [5]. Mainstream method of email communication took approximately twenty years, from the first e-mail communication. As per the report of MessageLabs Intelligence, seventy percent is unsolicited commercial email, spam, and

one in every thirty six emails contains a virus or malware, in attachments [5]. Technological advances provided effective management and administration of the functions and services of academic institutes [6]. Smart University is an evolving concept to integrate innovative concepts, smart software and hardware systems with smart learning systems [6]. Microsoft Excel spreadsheet is used worldwide to process, calculate and display information [7].

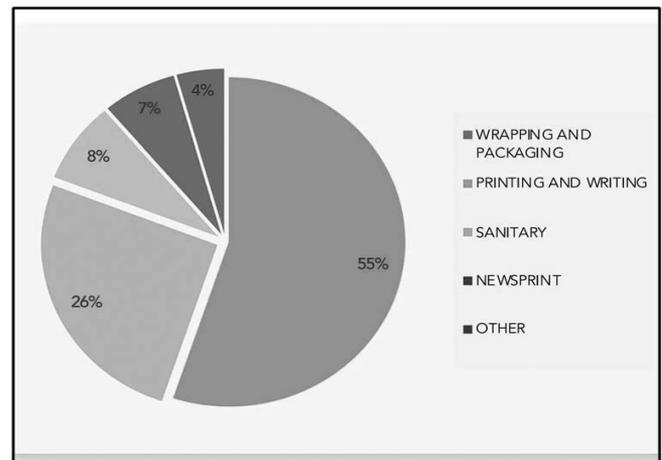


Figure 1.Global paper usage [8].

III. METHODOLOGY

- Softcopy newspaper
- Softcopy magazines
- SMS advertisement instead of paper pamphlets
- Passport card similar to ATM Card
- Softcopy Salary slips
- Softcopy prescriptions and medicine receipts, in corporate hospitals
- Interstate bus tickets in SMS
- Road transport authority to use Excel spreadsheet to replace paper
- City bus pass in email and SMS
- Railways to use e-gadgets ticket collectors to replace paper
- IRCTC to SMS general class tickets
- Railway employees leave applications online
- Cloth bags instead of paper bags for garments
- Discontinue printing bank passbooks
- Bi-annual tax bills in SMS and online tax collections

- p) Softcopy gas connections applications and gas passbooks
- q) Softcopy progress reports of school children
- r) SMS notice to replace college notice boards
- s) Semester exams application and fee to be online
- t) Semester mark-lists to be in email
- u) Softcopy textbooks being stored in g-mail
- v) Softcopy academic transcripts in academic recruitments and softcopy resumes [9]
- w) College newsletters in email.
- x) Semester fee auto receipt.

DESCRIPTION: Newspapers circulated in softcopy would minimize paper printing. Smart phones and tablets are now an inherent part of urbanized lifestyle. Thus, e-newspaper increases circulation besides minimizing cost of publishing and distribution. Newspapers like *Economic Times* and *Financial Express* could be good examples for softcopy circulation.

Softcopy magazines would be a huge boon to sustainable mechanisms in saving paper. Especially, entertainment industry magazines like *Stardust*, could be circulated in softcopy. Also, auto industry and aviation industry magazines could be in softcopy so that they reach the reader faster.

Instead of paper pamphlets, an advertisement in SMS would reach more audience. The Indian mobile phone industry is saturated. Except Below poverty line population, every Indian uses a mobile phone. Thus, the 108 crore mobile phones, at a rate of thousand sms per rupee, costs 10,80,000 rupees nationwide. Thus, sms advertisements could be selective in region and location, for cost benefit.

Card system passport of a nation, in softcopy, instead of hardcopy will be an added security feature to eradicate duplicate passports. It saves a lot of paper and effort. Passport once issued remains for lifetime and more utilizes informatics for globetrotting.

Salary slips are not utilized except for the purpose of a loan. Now-a-days, banks accept documents in softcopy. Thus, salary slips in governments and private firms, could be in softcopy. Distributing salary slips through bulk email increases efficiency in workplace and also eases workload. GMass, an add-on feature of gmail, eases the task.

Corporate hospital customers usually own a smart phone and medical prescription is a one-time use of paper. Thus, medical prescriptions could be in email. Also, the chemist could email the bill of medicines to the patient.

The bus transport has deployed automatic machines to print a ticket in a moving bus. However, a minimal technology enhancement would save a whole lot of paper. The automatic ticket machine could be internet enabled to send a ticket in SMS

to the passenger mobile number. It increases the utilization factor of the existing internet networks. The road transport ministry to use excel spreadsheet to create efficient ready-to-use data. For example, the passenger occupancy of a route could be recorded in an Excel spreadsheet for the purpose of ready analysis. Yearly excel work book could be used.

Similarly, employee attendance records could be put in an excel sheet. A city bus pass could be both emailed and sent in SMS to the passenger, every month.

Railways Ticket collectors in trains to use a tablet instead of paper lists. This enables faster information transfer junction-to-junction. General class tickets could be made available on IRCTC website to be sent SMS. This will avoid long queues at railway stations. The annual sub-urban and urban originating passenger traffic is 8,439 millions [10]. The daily headcount of passengers carried is 23.12 millions [10]. Railways employees online leave applications save paper.

Garment showrooms could use cloth bags instead of paper bags so that their customers would have an everyday use of those cloth bags. A bank statement could be downloaded online and thus, need not be printed on a hardcopy passbook. This saves a lot of paper and energy. Thus, a manual passbook remains only a proof of the bank customer. Bi-annual taxes like property taxes and municipal taxes are to be billed in SMS instead of paper and the taxes to be collected online instead of a single window service desk. And the tax receipts in email instead of a hardcopy. All new gas connections to be in an online application. The gas pass books to be put in a soft copy or SMS. All gas cylinder renewal applications to be made online.

A progress report of a student in school could be emailed to the ward's parents. The notice boards in colleges consume a lot of paper and not many students read those notices. Usually, these notices spread word-of-mouth among students. Thus, notices are to be sent in SMS. Thus, besides saving paper, it generates business. For example, a vice-chancellor notice as SMS to all the students in affiliated colleges generate BPO business. In undergraduate studies, a student has to register for the semester exams. Thus, it has an application and the requisite fee. The application could be accepted in softcopy into an online database and fee paid online. This eases the work of the university and also increases the utilization factor of the existing networks.

Every semester, academic transcripts are given to students in hardcopy. The semester marks-list to be emailed to students. It reduces the effort and also saves much paper. Instead of buying a hardcopy textbook, the university could email the recommended textbooks of each subject to every student. However, a standardized personal email format, firstname.lastname@ddmmyy yy@gmail.com, makes the job easy. The

student to utilize the free 15GB memory allocated to each gmail. Students could read those textbooks while commuting to colleges. Urban colleges have a daily commuting time of two hours to and fro. The softcopy textbook read in a tablet increases four working hours daily. The university to pay an agreed rate per student, to the publisher. College newsletters to be emailed among students and other stakeholders. A student when records his/her roll number in bank transaction for the fee paid, the concerned college could download the bank statement in excel format, to sort the statement roll number wise. It gives an auto receipt as to who has paid the fee.

IV. CONCLUSION

The environment conscious human being always strives to reduce paper usage and it could be done the best, utilizing technology more and more everyday. Each A4 size sheet of paper consumes 15-20 liters of water in its manufacture, besides other resources like paper pulp. The article is an effort to reduce paper consumption in the domain of public life and academics. Technology enhanced services should become a part of everyday urban lifestyle, thus contributing to environment safety and pollution control, for carbon emissions involved in paper manufacture. The article advocates increased use of technology to achieve a carbon neutral global society.

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