

Promotion of a paperless John Carroll University

Introduction

In *Laudato Si: On Care For Our Common Home*, Pope Francis pleaded with us all to protect the earth and all of Creation. He posted on Twitter: “We need to care for the earth so that it may continue, as God willed, to be a source of life for the entire human family.”¹ In this unprecedented Encyclical on Climate Change, Pope Francis pointed out that the environment is an ethical matter in addition to an economic or political issue. Recently, John Carroll University made a commitment to support a nationwide environmental sustainability initiative launched by the Catholic Coalition on climate Change: the St. Francis Pledge.

Deforestation exacerbates the release of greenhouse gas - carbon dioxide. Trees help mitigate against climate change by absorbing carbon dioxide via photosynthesis.² Paper use involves cutting down trees. As a Jesuit university, are we obligated to take the initiative to fight against global warming? What can we do to help?

One step is to reduce paper consumption by means of using electronic tools such as electronic documents and mobile devices. Our definition of “paperless” is to greatly reduce the use of paper or eliminate the use of paper in some processes.

Imagine a day when, on a typical college campus, there are no computer labs, no bookshelves, no filing cabinets, no book bags heavily laden, and only a few copy machines and printers. This is not a far-fetched scenario. These changes are already occurring, driven by new technologies and the need to reduce the operating costs for universities. Colleges and Universities such as Yale (started: 2014)³, Loyola University Maryland (started: 2009)⁴, and Tulane University (started: 2012)⁵ have made efforts to reduce costs and man hours while making many processes more efficient. An article published by Yale University suggested moving toward a paperless campus to save money, time, and trees.⁶ The article reported Yale University spent approximately \$680,000 on paper and twice that amount on toner in 2012 (university used 2.4 % less paper in 2012 than in 2011). The Yale report stated the following:

1. The school of medicine saved \$92,000 when replacing paper course packets with iPads.
2. The Student Employment office saved approximately \$100,000 by replacing paper timesheets with electronic process.

¹ http://www.nytimes.com/2015/04/28/world/europe/pope-francis-steps-up-campaign-on-climate-change-to-conservatives-alarm.html?_r=0

² <http://www.theguardian.com/environment/2012/nov/29/planting-trees-climate-change>

³ <http://its.yale.edu/news/yale-going-paperless-save-money-time-and-trees>

⁴ <http://www.loyola.edu/departments/paperless/about/history>

⁵ <http://tulane.edu/wfmo/paperless.cfm>

⁶ <http://its.yale.edu/news/yale-going-paperless-save-money-time-and-trees>

3. Finance and Business Operation saved about \$60,000 when it published annual report online instead of printing and mailing hardcopies.

It is worth noting that this article was published in 2013, when Yale had just begun reducing paper usage. It is reasonable to project more savings as the university makes progress towards a paperless campus. In addition to universities, many companies and organizations are taking major steps toward reducing paper consumption. Some examples include: filling out health information at the Cleveland Clinic, Disney World employees searching for answers to customer questions, ordering food from the menu at modern restaurants. All of these are now done by using electronic tablets.

Paper vs. Electronic documentation

A. Accessibility and Security

In today's world, data accessibility is a crucial element for organizations to stay competitive. Electronic data management (data input, information dissemination, storage, and data access) makes many operations more efficient and secure. Instead of employees needing to travel back to their workplace to retrieve paper documents and information, electronic documents are accessible anywhere at any time. This also enables virtually instant communication on a mass scale whereas paper mailings cost more and take much longer to reach recipients. In terms of security, an irreplaceable paper document may be lost during transportation; or be filed in the wrong location and thereby become irretrievable. Electronic documents that are properly protected by password protection, VPN, etc. are actually more secure as well as easily located using search engines.

B. Efficiency and Savings

Eliminating duplicate projects is one of JCU's goals, so that resources can be used more efficiently. When documents are in electronic format it is much simpler to identify duplicate processes. File searching by key terms helps one quickly and easily locate all possible documents related to a subject. Although digitizing information may seem intimidating and time consuming, John Carroll is already on this path. Some examples include: tenure dossiers, electronic pay stubs, online student petitions, digital books and journals at the library, financial operations. Despite these initiatives, there remains a significant amount of paper duplication of electronic documents. If all of us on campus were equipped with tablets these operations would become more streamlined. As information and data continue to expand, many recognize the necessity to go paperless if JCU is to continue to grow. Efficiency expert K. J. McCorry⁷ pointed out that across the Fortune 1000 companies, each employee consumed more than \$7500 on office document resources in 2002. US companies spend \$8 billion per year on managing paper. She also reported that the paper associated costs (storage, transporting, copying, printing, postage, disposal, etc.) is likely about 31 times the purchasing cost of paper.

⁷ a. <http://www.quepublishing.com/articles/article.aspx?p=1393497>

b. for cost of a wasted paper:

<http://cua6.urban.csuohio.edu/~sanda/syl/envpol/materials/GREEN%20FACTS.pdf>

While JCU is going full force in dealing with assessment, now is the best opportunity to manage data electronically rather than via paper means. Data can be directly entered and stored in the cloud such as Google Drive, Microsoft One Drive etc.). Those documents can be shared with others. Meetings can also be done online, e.g. Microsoft Skype for Business, (formerly called Lync) and Google Hangouts. This allows instant communication among administrators without the need of fax, or meeting in person etc. Operations can be more efficient.

C. Environmental impact

Electronic devices

Electronic documents require a computing device such as desktop, laptop, tablet, or other mobile device. These devices are sometimes blamed for e-waste but the real culprit is irresponsible human activity.⁸ In reality, most human activities can have an adverse effect on the environment, but this can be eliminated or reduced substantially through education and responsible stewardship. This applies also to e-waste, where every improvement we make is a step towards sustainability. Manufacturers are making recycling of tablets more of a priority. In 2012, only one tablet was listed on EPEAT (Electronic Product Environmental Assessment Tool) registry,⁹ there are 39 tablet/slatted devices that earned silver ratings at EPEAT in 2015.¹⁰ For example we can actually use electronic devices more efficiently by consolidating them in order to reduce waste (e.g. buy digital music and movies instead of DVDs). In addition we can use smart phones to replace many items such as paper planners, iPod/mp3 players, audio/video recorders, point and shoot cameras, portable GPS, etc. At JCU, we all already use computers, and replacing them with mobile devices will not add any additional e-waste, but will in fact reduce e-waste for the reasons stated above.

Paper

In paper production, pulp mills are sources for air, land, water pollution.¹¹ Waste paper contributes to about 35 percent by weight of municipal solid waste (before recycling).¹² Not all paper can be recycled. During the recycling process, de-inking is also a source of pollution.¹³

⁸ https://en.wikipedia.org/wiki/Electronic_waste

⁹ <http://www.infoworld.com/article/2613618/tablets/why-a-good-green-tablet-is-hard-to-find.html>,
<http://www.epeat.net>

¹⁰ <http://ww2.epeat.net/publicsearchresults.aspx?stdid=1&return=searchoptions&epeatcountryid=1&rating=2&ProductType=17>

¹¹ https://en.wikipedia.org/wiki/Environmental_impact_of_paper

¹² ["Executive Summary: Municipal Solid Waste in the United States: 2005 Facts and Figures"](#) (PDF). US Environmental Protection Agency, Washington, DC. 2005. Retrieved 2008-05-06

E-movement

As technology continues to advance and mobile devices become more popular, many organizations have already started moving towards paperless operations: electronic bank statements, e-mail, electronic surveys, electronic catalogs, etc. John Carroll University has already made some progress toward the paperless goal, however more can be done. For example, advising is done half with paper and half electronic (Bannerweb). University memos are sometimes on paper and sometimes electronic and sometimes both. The inconsistency can be confusing and the duplication wasteful and since the technology is already in place, consistently using digital means will make operations more streamlined.

Currently, mobile devices such as iPad, MacBook, 2 in 1 laptops, tablets, traditional laptops, Ultrabook, etc., are common platforms to handle e-documents. Tablets formerly were used to do web browsing and e-books reading. As cloud computing is evolving with such applications as OneDrive, Google Docs and virtual desktop apps., tablets can now handle what common traditional laptop computers do such as Word and Excel documents. Recently Microsoft released Office for iPad¹⁴ and Android tablets.¹⁵

Tablets or tablet laptops (2 in 1 laptop or convertible laptops) are about half of the weight of a traditional laptop. Thanks to music and video streaming, these mobile devices do not usually come with a DVD drive. The light weight of these devices makes them more portable. As the computing power keeps improving and the virtual desktop is getting more popular, the sale of traditional PCs continues to decline.¹⁶

Stepwise promotion of Paperless JCU Campus

A Equip students with 2 in 1 laptops

Many JCU students receive about 30-40 % tuition discount. We propose that JCU provide a 2 in 1 laptop as part of a student's financial discount package. Each incoming student will receive a 2 in 1 laptop to last through his/her entire education at JCU provided that the student agree to pay a higher fee for printing. This provides an incentive for new students to reduce printing. JCU currently has a policy to limit free printing on campus, but students can easily obtain an increase on their free printing allowance.

This proposal to provide a 2 in 1 laptop will not incur new costs for JCU since it is part of the student's financial discount package. On the contrary, we think it will gradually reduce operating

¹³ ["Paper Sludge - Waste Disposal Problem or Energy Opportunity, 1999 Engineering Conference Proceedings"](#). Technical Association of the Pulp and Paper Industry (TAPPI), Norcross, GA. Retrieved 2008-05-07.

¹⁴ <https://itunes.apple.com/us/app/microsoft-word/id586447913?mt=8>

¹⁵ <https://products.office.com/en-us/mobile/office-android-tablet>

¹⁶ <http://www.bloomberg.com/news/articles/2015-04-30/stmicroelectronics-forecasts-sales-trailing-analysts-estimates>

costs. Currently, a good 2 in 1 laptop costs less than \$500 and the price keeps dropping as Intel is producing more powerful and cheaper computer processors¹⁷ In addition, we propose a partnership with the local Microsoft store. Bulk purchasing and tax-free privileges should reduce the price for each computing device.

In addition, the local (Beachwood Mall) Microsoft store opens 7 days a week. JCU students can receive their professional services such as virus removal and other computer related issues (some services are free even after the warranty expires). JCU currently offers shuttle service to the Beachwood mall area. If we can work out a deal with Microsoft, students may get a two year free replacement warranty, called Microsoft Complete Accident Protection, for their computer¹⁸ at lower price (currently cost is about \$150). Working with Microsoft or Apple to make good use of their technical support will help alleviate the heavy workload of our IT department. The effect is similar to hiring more IT associates without paying the cost. JCU may get faster technical support and also free tutorial lessons. This will gradually reduce printing related costs such as buying new printers and copiers, and supporting staff.

Why Microsoft products and not Apple products? JCU contacted both Microsoft and Apple. Microsoft promised bulk purchasing discounts on their products but Apple refused due to their company policy. In addition, Apple MacBook is more expensive and does not have the touch screen feature, therefore, students cannot use it for in-class note taking. However, I-pad is definitely a viable alternative. Among 2 in 1 products, we found Microsoft Surface an adequate device at a reasonable price. We tested the Surface digitized pen and Lenovo Yoga digitized pen. The Surface digitized pen is more responsive and accurate. Surface 3 devices now sell for about \$400. With the coming of Surface 4, the price of a Surface 3 will be further reduced.

B. Equip faculty and staff with 2 in 1 laptop

Upgrading our Windows operating systems to Windows 10 is inevitable, Windows 10 allows touch screen capability (started in Windows 8) in addition to traditional mouse and click functions. It features ease of access, a group of features, to help people with vision problems. It meets the needs of wider audiences. To adapt to this newer operating system, JCU can either buy new monitors (touch screen capable; \$200 +) along with desktop computer (\$300 +) or 2-in-1 laptops to meet the technological need. The 2-in-1 laptop option seems more logical because bulk purchasing helps lower the price. Today, many faculty own a personal computer. It is an out-of-our-pocket expense. Faculty would be appreciative of a 2-in-1 laptop that we could bring back home to do work and reduce personal expense. It can be seen as a token to show appreciation of an employee's hard work. It helps people to consolidate electronic equipment (one 2-in-1 laptop instead of desktop monitor, desktop computer, tablets, and/or personal laptop).

¹⁷ As new chips released to the market, the older but sufficient processor gets cheaper.
<http://www.cnet.com/news/intel-skylake-chips-what-you-need-to-know-faq/>

¹⁸ http://www.microsoftstore.com/store/msusa/en_US/pdp/Microsoft-Complete-Accident-Protection-for-Surface-Pro/productID.274920000?WT.mc_id=pointitsem_Microsoft+US_google_5+-+Microsoft+Store+DSA&ef_id=VfqvjgAAAUsoj3Aj:20151029125018:s

Equally important, this will make the computing system more uniform and easier to manage on campus. This should help advance faculty and staff technological knowledge. It is our duty to equip students with the knowledge and preparation for their future endeavors. Without keeping up with current technology development, JCU becomes less attractive and inspirational to students. For example, some people may raise their eye brows if a company asks for information to be faxed rather than sent electronically via pdf or doc or asking a letter of recommendation to be mailed rather than online submission. Why? Because it is less convenient. In fact, some JCU departments do not own a fax machine. The younger generation prefers texting to phone conversation. Rather than try to change our students' preferences, the university should keep pace.

On-line courses are becoming increasingly popular. 2-in-1 laptop touch screen capability enables note writing (OneNote allows writing on pictures, pdf document and such). Utilizing screen recording, a lecture video can be easily made, broadcast, and stored. As video technology advances and HD TV offers many features such as light weight and superb picture quality it will be difficult for those accustomed to HD TV to switch back to bulky older TV. Implementation of electronic devices may be crucial for future classroom demonstrations as the 3-D video technology advances. Spatial concepts can never be fully communicated by a chalkboard or paper. With the 3-D and HD TV, objects such as Art works and molecular structures can be shown in more precise detail. We need to keep learning new things so that we are ready for better demonstration tools.

This technology may be also essential for recruitment. When prospective students and their families tour campus, and that vital first impression is made, it would give an impression of backwardness if they see a bulky TV on the wall. Similarly, parents and students, especially students with disabilities, will prefer a campus that is filled with light weight and portable electronic devices rather than heavy and bulky book bags.

To create an incentive for faculty to adopt new technology, adaptation to technology can be considered positively in evaluations of teaching effectiveness. Part of a teacher's job is to inspire students. Technology is an integral part of knowledge. Advanced studies such as in medical schools are starting to rely heavily on 'flipped classroom' models. These allow students to watch lecture videos such as dissection before going into lab to practice procedures.