

Preface

In the time of evening instead of all sacrifices give thanks, and Instead of offerings deliver a pure prayer in love, and he who has mouth and word and tongue ought to give thanks for the creatures which are silent.

St. Jacob of Serugh (+521)

تَتْرُكُ الْفُجْرَ سُلُوًّا وَتَلْجِئُ إِلَى كَلْبِهِ الْأَمْتِ بَلْبًا
وَسُلُوًّا تَقْدِرُ عَلَى كَلْبِهِ كَلْبًا بِجَبَلِهِ كَلْبًا كَلْبًا
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حزب بحمد الله (+521)

With the swift growth in technology usage by individuals and businesses alike, both nationally and internationally, technology becomes a substantial instrument not only for communication, collaboration and cooperation but also for conducting research, entertainment, finance, human resource, marketing and knowledge management. Currently, the recycling of technological devices has become a major dilemma for users and businesses. A modern society should tackle and address this problem in a matter of urgency. The urgency about the matter lies in the lack of ability by the existing infrastructure to handle the increased demands of users and businesses. If the trend continues, the seventh generation [1] will have fewer chances to enjoy an infrastructure similar to the current one.

To tackle and address this problem, it is crucial that the education sector plays an important role in transforming businesses, designers, students' critical thinking and mind-sets towards sustainability and Green IT usage.

This can be achieved by integrating sustainability and Green IT strategies in the education curriculum as well as in businesses and designers' strategies. The

education sector should raise and alert users, designers and businesses' moral responsibilities for their contribution to worldwide sustainable development; guiding them to become more sustainable and greenish, sharing with them some strategies, tactics and approaches to change their habits at workforce and study to become greener.

This book aims to address the awareness of sustainability and Green IT in higher education and businesses in developed and developing countries and, furthermore, to raise the new leaders' awareness and mindfulness toward the technology usage problems, as well as to examine the advantages and disadvantages of sustainability and Green IT from the higher education and organizations perspective. Finally, this book will support higher education, business sectors and academic audience (academics, university teachers, researchers and post-graduate students – both Master and Doctorate levels). In addition, it will be beneficial for public and private universities, Information Systems (IS) and sustainability developers and researchers, education managers, professionals related to the Information Society and Information and communication technology (ICT) and education sectors.

The majority of respondents from various countries indicated that sustainability can produce various advantages that include increased productivity, the creation of new jobs and business opportunities, attracting quality employees and satisfying the needs and expectations of customers, stakeholders, the community and society in general. Furthermore, assimilating and integrating sustainability in business strategies and everyday activities will reduce harmful emissions, pollution, health hazards, carbon footprint and the consumption of energy, raw materials and water. However, sustainability can bring some disadvantages from increased marketing failure, scandals by perceived environmental irresponsibility, insurance crises due to environmental disasters, new regulations, security, competition for and cost of raw materials, and increase in fraud including environmental actions and breaches of environmental compliance.

Nowadays, to be sustainable, exercise good stewardship and act sensibly, individuals and organizations must integrate sustainability strategies in their activities. This can be done via various resources and technologies such as Green IT and smart technology in order to conserve resources, energy and raw materials while serving crucial social needs.

There is a rapid increase in the technology used by individuals and businesses alike, both nationwide and worldwide, technological devices now play a significant role in a range of everyday human activities, not only for communication, collaboration and cooperation but also for research, entertainment, finance, human resources, marketing and knowledge management. Currently, the recycling of ICT devices is a major concern for businesses and individuals, since it is not simply a means of addressing environmental damage or a solution to an environmental problem. As a nation, we should tackle this problem as a matter of urgency.

Our planet continues to be damaged by human activities. Hence, there is an urgent need for a major shift in the priorities and mindsets of industries, IT professionals, educators, researchers and technology users since there is no plan B for our planet [1]. Therefore, ideas, opinions and strategies should be developed to manage this problem in both developed and developing countries. Sadly, developed countries

are shifting the problem from their own backyard to another area. These countries consider themselves to be sustainable whereas in fact their manufacturing and production activities are being conducted in a developing country.

Developed countries should assist by offering new strategies to the developing countries in order to help them cope with an increasing population and the increased demand for food, health, education, infrastructure and other facilities, especially for the new “Internet” generation. This generation’s people want the same commodities and facilities as their counterparts enjoy in developed countries. This will cause a huge problem, not only for the developing countries but globally, since this generation expects to have new devices, including mobiles, computers, laptops and other technological devices, thereby putting huge pressure on the supply of raw materials, especially in developing countries such as India and China.

The urgency of the matter lies in the lack of ability by the existing resources to handle the increased demands of users and businesses. If the trend continues, the seventh generation [3] will be unable to enjoy an infrastructure similar to the current one. Stakeholders at all levels, including universities, must contribute to the transition towards a sustainable world.

The tertiary education sector plays a major role in transforming societies’ and students’ critical philosophies and world views through their curricula and research. Universities need to raise students’ awareness, especially in relation to their moral responsibility to contribute to sustainable development, and guide them to a better, sustainable future. Currently, there is a call for businesses and individuals to integrate sustainability in their business strategies and to include cloud computing technology for example, as a tool for sustainable work especially in the IT departments to cut costs and increase efficiency and productivity.

By adopting sustainable strategies, businesses and individuals who are aware of the carbon footprint and environmental damage can conserve raw materials for the seventh generation, as well as to share their level of commitment to alleviating environmental problems. Therefore, the higher education sector should take responsibility for teaching students about sustainability and raising their awareness, as they will be the leaders of the future whose role will include preserving the current infrastructure, and conserving raw materials and resources for the seventh generation.

In the wake of the global financial crisis in 2007–2008, academics, researchers and universities started to consider how to confront these financial glitches facing organizations of all sizes internationally and nationally. Organizations, and in particular their IT departments, were pushed to handle the pressure successfully. Therefore, to alleviate this problem in organizations and in particular their IT departments now and in the future, universities started to introduce topics related to the concepts of sustainability and Green IT in order to raise awareness of the ways in which ICT harms our planet and to ensure that students acquire the necessary knowledge of these concepts since the majority of the students confirmed that these concepts are new and not part of their vocabulary [2]. In Western Australia, specifically at Curtin University, a postgraduate unit on sustainability and Green IT was developed and delivered to master degree students.

Now, to resolve these problems world-wide, academics need to develop units which focus on sustainability, ethics, moral responsibility, physical and spiritual welfare, and Corporate Social Responsibility (CSR). It is anticipated that such units will shift students' mindsets as the specific activities and assessment tasks will encourage students to adopt sustainable, ethical practices that will benefit them and their communities, and ultimately their country. These students will transfer their knowledge to other generations by education, face-to-face or online via the social networking tools, i.e. Facebook, Twitter, LinkedIn, Google+, YouTube, Pinterest and Instagram. The new technology plays a major role in transforming the thinking, attitudes and behaviour of the new generation since they depend on these technologies and we can reshape the new generations' conduct and mindsets via workshops, discussion, debate, communication, cooperation, collaboration and connection.

Time is running out guys, and we need to move quickly as soon as possible, as I mentioned previously that our planet is suffering and deteriorating from our actions and activities, and as human beings, we need to pay attention to our Mother Nature as majority of the damages was carried and done by 'Human Beings'; as a result, we need to take responsibility to tackle this problem as soon as possible to allow the seventh generation to live in similar conditions as us, as there is no plan B for the planet.

We need to integrate and practice sustainability in all our everyday activities, i.e. truth, beauty, moral goodness, economic opportunity, justices, liberty, physical security, cultural creativity, natural environment, high quality of life, good education and political, law, social and technology needs. The practice of sustainability will make our lives healthier, fitter, and stronger for our community and society. Good stewardship and ethical conduct will ultimately be rewarded and celebrated based on our actions locally and globally, and this means living with aspiration, ambition, hope and desire now as well as in future.

In conclusion, this book aims to examine, analyze and present the outcomes from our study on sustainability awareness in developing and developed countries. Currently, sustainability is a buzz word with which people have become familiar via education. The majority of the authors from this book indicated that sustainability should consider and reflect on individuals and organisations duties, in order to change their mind-set, attitudes and activities so as to preserve our planet. The following are comments from students who completed a master degree unit on sustainability and Green IT awareness and responsiveness.

I would say that completing [ITS65 unit] has given me a new skill altogether, Sustainability Management. This is an area that I have previously professed to have very little knowledge of. However I now feel that I have learnt enough about sustainability to put it into practice in my profession and make a difference to the work that I do.

I am very glad that I took this unit and I believe it has opened my eyes on new aspects that I did not know before. Furthermore, studying this unit has inspired me to participate in spreading the awareness of Green IT the author's awareness of sustainability was absolutely improved. My mind-set was changed and nowadays, despite of only blindness pursuing the high-end technology product, the author now will pay more attention on the products and manufacturer's sustainable aspects.

I think [My] University is doing a good job by including this unit in its curricula and being an example to other universities because it is education and learning that play a vital role in changing the attitude and mindsets of the students towards the society and the environment as well. Other higher education institutions should also understand this role and they should take initiatives in transforming their education system and move towards providing sustainable education by introducing sustainability or sustainable development concepts into the curriculum.

Though the subject on sustainability is offered in very scanty manner in universities, 'it is the subject' everyone must learn and practice in their 'life' to care for the planet and generations to come. This course will definitely impart a good amount of 'concerns' on the sustainability of mother earth by our own actions leading to be 'reasonably good humans' in the process.

Sustainable and Green IT is a good unit. Which basically focuses on issues and problems technology is causing and how we can stop technology from harming environment. It also mentions that we have to concentrate and work towards sustainable development so that we preserving for future generation.

University is a place where the students, the future leaders, are nurtured through learning, experiment, and research. So, by introducing sustainability and green IT in the education sector, universities will create awareness and boost students to become socially and environmentally responsible. I also feel that [My] University should make such curriculum available for all students irrespective of what courses they are undertaking.

... Tomayess and Theodora shared with you some of their students' comments which indicated that completing the sustainability unit for the master degree changed their mindset and attitude regarding our planet.

Guys, we need to move rapidly, as I said our planet is in pain and we need to heal this pain quickly, otherwise it will be too late for us and the most important for our next generation, guys there is no plan B for the earth... therefore, take care of it.

Finally, guys we are visitors on this planet and we need to pay attention of our mother nature from economic, environmental and social conditions; once we consider them carefully, we will live in sustainable life, now and in the future. Consequently, the time for action is now and we need to act swiftly otherwise, it will be too late to illuminate the current and future problems.

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References

1. Issa T, Isaias P (2015) Sustainable design: HCI, usability and environmental concerns. Springer London
2. Jucker R (2002) Sustainability? Never heard of it!": Some basics we shouldn't ignore when engaging in education for sustainability. *Int J Sustain High Educ* 3 (1):8–18
3. Newton LH (2003) Ethics and sustainability, sustainable development and the moral life. In: *Basic Ethics in Action*. Prentice-Hall, Inc., Upper Saddle River, New Jersey, United States



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