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## Editorial

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## 1 Introduction

There is a vibrant debate going on regarding global warming and climate change; with increasing concern over the preservation of the ecosystem. Proponents of global warming warn about the cataclysmic effects of neglecting the environment in designing systems for the 21st century. Others believe that the environmental changes are natural phenomena that need to go through their natural cycles – that they are not necessarily man-made, but a natural outcome of the interaction among the celestial bodies in the universe. While the jury is still out on the causes of global warming, there is no doubt that it is important to begin to analyse the effects of technology decisions on the environment. Airplanes are getting more powerful and consume a lot more fuel than they did 50 years ago. The ‘explosion’ of electronic devices has resulted in a very dense

network of communications hardware all over the world. Population growth has increased energy consumption – particularly fossil fuels. There has also been a dramatic increase in the level of awareness in developing countries regarding the impact of economic activity on the global environment. Countries that were oblivious of the interdependence of their economic activity with other countries are beginning to engage in dialog with other international organisations to pursue programmes that are in consonance with the evolution of energy-efficient systems. These new attitudes present opportunities for industries in these countries, to engage in environmentally-friendly activities so as to be able to play significant roles in the global market place. Virtually, any new enterprise has to perform an *impact analysis* to determine the extent to which the enterprise affects the ecological balance of the world. It is therefore important that technology and business experts engage in research to assess the risks and benefits associated with expansion of their activities so as to meet the environmental challenges of the 21st century.

## 2 Subject coverage

There are several factors that impact the environment. In the 21st century, as more and more countries become industrialised, the consequence will be even more dire. It is therefore critical that research be done over a wide range of topics, to help develop appropriate strategies for sustaining the environment. Significant among the areas of coverage include: strategic importance of energy conservation in the 21st century, environmental innovations in information technology, risk management technology investment, The role of oil and gas production on emerging technologies, contingency planning against terrorism and sabotage, ethical issues in the development of business models for a healthy environment, computational intelligence for mitigating disasters, modelling risk decisions with imprecise information, forecasting trends in environmental conservation, information security and resiliency, crisis detection and decision making. It is only by addressing these and several other issues early in the 21st century can we be able to minimise the potential damage to the environment, of unstructured and uncoordinated development in the world.

## 3 Special issue

There is a wide array of topics covered in this special edition of the *International Journal of Business Continuity and Risk Management*.

Most manufacturing processes require various processes such as milling, drilling, and turning. In their paper on machining processes, Khettabi et al. develop a new sustainability model using fuzzy logic so as to increase productivity, substantially reduce energy consumption, environmental pollution, while at the same time enhance safety.

There is a tremendous increase in the number of countries that are becoming industrialised. This results in the generation of a lot of waste material; and there is an increasing need to determine how best to dispose of such waste. In their paper on an approach to forecast computer waste quantities, Kothari et al. applied grey relational analysis to computer waste disposal in India. This model can be replicated in other

emerging economies where the issue of computer waste disposal is becoming more rampant.

With the recent earthquake and nuclear disaster in Japan, there is an urgent need to seriously develop sustainable business practices to facilitate business resilience and sustainability. In his paper on integrating sustainability into business continuity planning, Miller highlights the strong relationship that exists between environmental stewardship and industrialisation. The paper provides an insight on how poor business decisions magnify the impact of natural and environmental disasters on industry.

There are several factors that need to be considered in evaluating risk in any country. Lameira investigated which factors have significant impact on risk in publicly traded companies in Brazil. Using regression analysis she was able to establish an index for evaluating risk in Brazilian publicly-traded companies.

The management of the risk that stakeholders take in investing in a company is crucial to the sustainability of the company. Gil Lafuente and de Paula using techniques of fuzzy logic, studied how best to set priorities so as to minimise the risk to stakeholders. This can be used as a model by investors to assess the risk associated with their investments.

As systems become more complicated, there is the need to develop sophisticated strategies for ensuring that products function according to the required specifications. This means that quality assurance should be continuously improved to keep up with the technology of the 21st century. Soluade presents one such technique for reducing the amount of effort that goes into certifying the quality of a product. The results are compared with the alternative of complete exhaustive testing, and the results indicate that there is no loss in the integrity of the test by using such an approach.

There have been situations where corporations have collapsed due to inadequate disclosures by the firm about its operations. Uwuigbe, in his paper on the relationship between corporate social responsibility disclosures and firm size, established a correlation between these two factors and suggests that company size and social responsibility disclosures can be predicted and used to estimate the impact of the corporation on the environment.

Due to increasing energy demand worldwide, and the environmental impact of the burning of fossil fuels, there has been an increasing focus on solar energy. Fendyur, in his paper 'Quantitative assessment of solar energy geo-policy risks', tackles the issue of the geopolitical, social, and health-related risks associated with the increased use of solar energy. This is vital for policy-makers, industry and international organisations so as to minimise possible conflicts in the future.

In general, the issue of sustainability, risks and environmental challenges of the 21st century are tackled from a broad range of perspectives. It is hoped that the publication of this special issue will help to elucidate the issues raised, and provide a basis for further investigation into how best to plan for the survival of the planet in the long run.

#### **4 Invitation to contribute**

The editorial team of the *International Journal of Business Continuity and Risk Management* invites both professionals and academics to contribute their work to the journal in order to continue this important discussion and to advance our knowledge in

this critical area. Authors can submit contributions investigating the impact of technology on the environment and how it correlates with climate change. The goal is to provide a reservoir of material for use by decision-makers in the management of technology in the 21st century. All papers are refereed through a double blind process.