



TJIC Alert

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TECHNOLOGY & INNOVATION

1. Roots of Innovation

eJournal USA

November 2009

Full Text: <http://www.america.gov/media/pdf/ejs/1109.pdf>

Economic expansion depends more and more on innovation — not simply producing more goods and services, but producing ever newer goods and services. This issue of eJournal USA seeks to show that innovation needs the right conditions to emerge.

2. Spinoff: Innovative Partnerships Program 2009

National Aeronautics and Space Administration

November 2009

212 p.

Full Text: <http://www.sti.nasa.gov/tto/Spinoff2009/pdf/spinoff2009.pdf>

The Spinoff shows how NASA technology is being put to use in everyday life here on Earth. The latest Spinoff highlights 49 significant examples of how NASA innovations have been transferred to the commercial marketplace, resulting in healthcare advances, transportation breakthroughs, public safety initiatives, new consumer goods, environmental protection, computer technology, and industrial productivity. In honor of the 40th anniversary of the Apollo 11 lunar landing, this year's edition of Spinoff also recaps how Apollo continues to provide tangible benefits to the lives of people in the U.S. and around the world.

3. Managing Electronic Waste: Issues with Exporting E-Waste

Linda Luther

Congressional Research Service

Full Text: <http://www.fas.org/sqp/crs/misc/R40850.pdf>

October 2009

15 p.

Electronic waste (e-waste) is a term that is used loosely to refer to obsolete, broken, or irreparable electronic devices like televisions, computer central processing units (CPUs), computer monitors, laptops, printers, scanners, and associated wiring. Although there may be limited data regarding how e-waste is managed, the consequences of export to countries that manage it improperly are becoming increasingly evident. The impacts associated with e-waste exports have led to concerns from environmental organizations, members of the public, and some Members of Congress.

4. A Global Problem: Cyberspace Threats Demand an International Approach

David Wilson

Armed Forces Journal

July 2009

Available online at <http://www.armedforcesjournal.com/2009/07/4062667/>

Cyberspace has changed the way people communicate forever, the author writes, but with that change comes a host of new problems including identity theft, computer viruses, the defacement of websites and network intrusions. He says cyberspace has become “an entity unto itself, not controlled by anyone, but affecting all in one form or another.” Nations need to establish agreed-upon standards to help resolve problems plaguing cyberspace, including cybercrime. Wilson, who is chief of cyberlaw at the Army’s U.S. Space and Missile Defense Command, advocates setting up an international organization comprised of cyber-faring nations to oversee the borderless domain of international cyberspace. Such an organization would promote collaboration by governments and industry on software and filtering standards needed to block viruses and create an international firewall. He also calls for the creation of an international cyberspace convention to monitor the health of cyberspace and to deal with problems. Within that context, the author says an international Computer Emergency Response Group must be created.

5. Appropriate Technology for the Developing World

Ian Woofenden

Home Power

October/November 2009

p. 80-85

The author, a wind-energy consultant and Costa Rica coordinator for Solar Energy International, writes that, properly executed, renewable-energy technologies in the developing world can provide for sustainability and a higher quality of life, and enable developing-world communities to “avoid some of the poor development choices we in the ‘prematurely developed’ world have made.” Woofenden explores technologies that work best in many countries, such as solar cooking, which reduces the pressure on natural resources and time and effort spent gathering firewood; solar electricity, which can reliably power lights, schools and medical clinics without having to purchase candles or kerosene; methane biodigesters, for the microbial breakdown of manure into cooking gas; hydroelectricity, making use of running stream water to generate power; and solar water heating and purification. He writes that his own field, wind energy, is not always the best technology to use in many rural locations in developing countries, due to the lack of suitable sites and the greater need for regular maintenance and repair.

6. What If?

Moyer, Steve
Humanities

July/August 2009
p. 32-36

The author believes that it is difficult to take in all the ways that reading is changing in response to new technology. Bob Stein, co-director and founder of the Institute for the Future of the Book, is exploring how the digital revolution is transforming the way we read. One of Stein's recent projects was a kind of online book club in which seven women engaged in a close reading of Doris Lessing's *THE GOLDEN NOTEBOOK*, then commented online in the margins of the electronic book, by means of an open-source software called CommentPress. Moyer explores the changes in the book in the past thirty years, noting that there have been more advances in the evolution of the book than there had been in the past five centuries. Currently available online at <http://neh.gov/news/humanities/2009-07/WhatIf.html>

7. The World at Your Fingertips

Fineberg, Gail
Library of Congress Information Bulletin

May 2009
p. 87-91

On April 21, 2009, Librarian of Congress James Billington launched the cultural-heritage website World Digital Library (WDL) to an international audience at UNESCO's headquarters in Paris. Ahead of the launch, UNESCO members were invited to encourage their cultural institutions to participate in the development of the project since one of UNESCO's mandates is to promote the free flow of all forms of knowledge in education, science, culture and communication. WDL contains cultural treasures that twenty-five institutions in eighteen countries contributed to this new global library, which features some 1200 digital items, including content about all 192 UNESCO member countries. WDL contains works by many noted poets, mathematicians, theologians, philosophers, astronomers, cartographers and historians in addition to rare books, maps, and manuscripts, along with works in more modern formats, such as films, sound recordings, prints and photographs. The WDL interface is in seven languages: Arabic, Chinese, English, French, Portuguese Russian and Spanish.

8. The Role of a "Cyber Czar"

Sloane, Stanton
Available online at <http://www.armedforcesjournal.com/2009/09/4214383>

Armed Forces Journal

September 2009

The FBI reports that cybercrime is the third-greatest threat to U.S. national security, following right after nuclear war and weapons of mass destruction. The author, president of SRA International, writes that the magnitude of the cybersecurity problem is vastly misunderstood and underestimated, especially with respect to the theft of intellectual property. Apart from criminals and youthful hackers, foreign intelligence operations pose the greatest threat to critical infrastructure. Sloane predicts that any firm in possession of technology of interest has either been cyberattacked or will be. The new cyberczar, or cybersecurity coordinator, that President Obama has promised to appoint, "has his or her work cut out;" that person's most important assets will be the president's ear and money for cyberdefense improvements. Much has been written about the need for public-private cooperation in this field, and Sloane says that government and industry must promote and fund innovation.

9. Nanotechnology in Food Products

Leslie Pray and Ann Yaktine

Institute of Medicine

October 29, 2009

Full Text: http://books.nap.edu/openbook.php?record_id=12633

Nanotechnology, an emerging technology that enables researchers to manipulate matter at the atomic level, is providing scientists with the ability to enhance food safety and make foods more nutritious and satisfying by enhancing their nutrition content and other characteristics. However, researchers still have much to learn about the result of using nanotechnology to create food packaging or to modify a food, including both benefits and unanticipated adverse effects.

[Note: contains copyrighted material].

10. Growing U.S. Trade in Green Technology

Steven F. Hayward

October 7, 2009

American Enterprise Institute for Public Policy Research

4 p.

Full Text: <http://www.aei.org/docLib/10709%20Hayward%20Testimony.pdf>

The two main issues that should be considered when assessing the prospects for increased export potential for American energy technology are the actual dynamics of the present market environment and the cross-cutting factors that will come to bear on how trade flows will unfold in the real world, according to the testimony.

[Note: contains copyrighted material].

11. Biotech's Plans to Sustain Agriculture

Scientific American

October 2009

Currently available online at <http://www.scientificamerican.com/article.cfm?id=biotechs-plan-to-sustain-agriculture>

Popular sentiment may call for more organic methods, but the agricultural industry sees biotechnology as a crucial part of farming's future. By 2050 or so, agriculture will need to produce about 50 percent more food than it now does because of the expanding population. Traditional crops and farming methods could not sustain that much productivity. In this panel discussion, representatives from the agricultural industry defend genetically modified crops as one of several tools that should be used to help farmers in developing countries become more productive.

12. Eureka Moments: How a Luxury Item Became a Tool of Global Development

Economist

September 24, 2009

Currently available online at

http://www.economist.com/specialreports/displaystory.cfm?story_id=14483872

Mobile phones, now affordable to the vast majority of people around the world, have become the single most transformative tool for development, according to Jeffrey Sachs of the Columbia University's Earth Institute. There is also some evidence that mobile phones can be used to root out corruption; the article cites the example of an official in Pakistan overseeing land transfers, who randomly called the mobile numbers of buyers and sellers to find out if they had been asked to pay bribes.

13. Public Safety Communications and Spectrum Resources: Policy Issues for Congress

Linda K. Moore

November 10, 2009

Congressional Research Service

40 p.

Full Text: http://assets.opencrs.com/rpts/R40859_20091110.pdf

Effective emergency response is dependent on wireless communications. To minimize communications failures during and after a crisis requires ongoing improvements in emergency communications capacity and capability. The availability of radio frequency spectrum is considered essential to developing a modern, interoperable communications network for public safety. Equally critical is building the radio network to use this spectrum. Opinions diverge, however, on such issues as how much spectrum should be made available for the network, who should own it, who should build it, who should operate it, who should be allowed to use it, and how it might be paid for.

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