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Mobile Technology and Sustainability

Meghan Kenny
Pace University

Christelle Scharff
Seidenberg School of CSIS, Pace University

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Mobile Technology and Sustainability

Meghan Kenny & Dr. Scharff

Dyson

Seidenberg



Research

- Part 1
 - Building a set of resources to be used by students developing apps for sustainability
- Part 2
 - How multi-disciplinary teams can work together to be successful in building mobile applications that integrate a global perspective (on sustainability)? What roles can team members play?
- Part 3
 - What are the contributions of mobile developers worldwide related to sustainability?

Resources

Global Software
Development

Mobile developers

Defining Sustainability



“Improving the quality of human life while living within the carrying capacity of supporting eco-systems” based on “the reconciliation of environmental, social equity and economic demands”

United Nations Environment Programme

IBM Smarter Planet Model



Instrumented
Interconnected
Intelligent



<http://www.ibm.com/smarterplanet/>

What Mobile Technology?

- Mobile applications
 - Android, iPhone, Blackberry, Windows phone 7, feature phones
- Mobile web sites
- SMS services
- Voice solutions



Building mobile applications for
sustainability

Global Software Development



**Interdisciplinary
teams to work
together**

**Global vision of
sustainability**

**Mobile solutions
relevant globally**

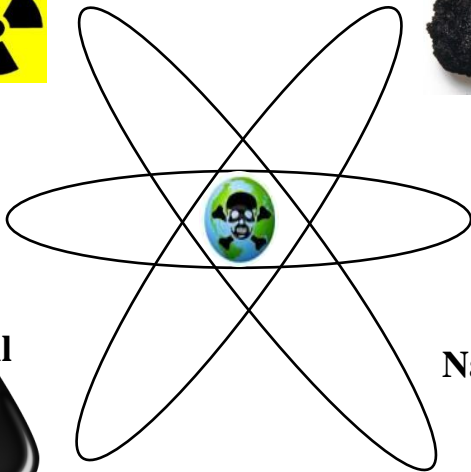
Role: Researcher / Content Manager

Non-renewable energy

Nuclear



Coal



Oil



Natural Gas



Physical environmental destruction



Brainstorming Interviews

Develop effective content

Communicate

Review content

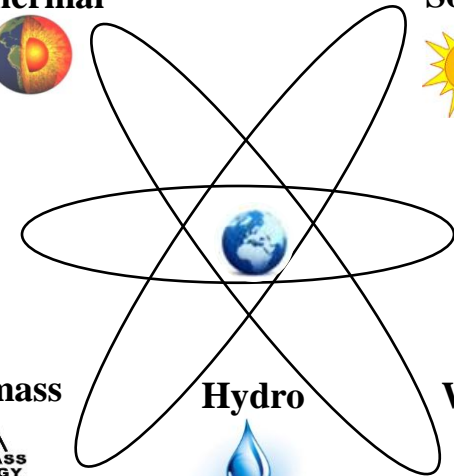
Test application

Clean and renewable alternatives

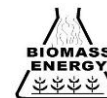
Geothermal



Solar



Biomass



Hydro



Wind



Water, electricity, recycling



The Go Clean Android Application



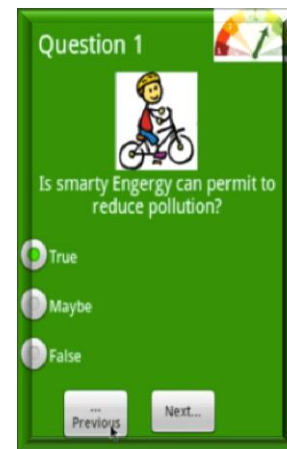
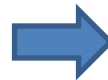
Raise awareness, educate, engage users



Learn / tips

Evaluate / quiz

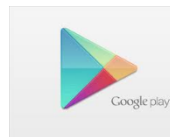
Create / engage



How are mobile app developers
targeting sustainability?

Mobile Developers and Sustainability

- Research questions
 - How are developers addressing the issues related to sustainability?
 - How are developers instilling messages on sustainability to users?
 - What types of apps are they developing?
 - What topics of sustainability are they tackling?
- Methodology
 - Qualitative analysis of the content of the app marketplaces



Preliminary Results for the App Store



- Use of 15-20 keywords relating to sustainability
- IBM Many Eyes Word Cloud Software
 - Patterns in the descriptions of the apps
- Findings
 - Energy, solar, green, power
 - Marketplaces organized in categories including education, health, games, lifestyle...
 - More free apps
 - More apps than games
 - Apps by companies

Keyword	#Apps	Free	Paid
Solar Energy	94	56	38
Global Warming	85	38	47
Climate Change	58	36	22
Renewable Energy	50	35	15
Eco Friendly	46	23	23
Carbon Footprint	40	33	7
Energy Efficiency	40	33	7
Environmental Sustainability	40	31	9
Nuclear Energy	26	11	15
Clean Energy	19	14	5

Figure 1. Top 10 Keyword Searches

- Limitations
 - Keywords
 - Marketplaces evolve quickly
- Future research
 - Time intervals
 - Identify trends / changes



Figure 2. Word Cloud Built from the Abstracts of the Top 15 Keyword Searches

My Experience as a Student

- Conferences
 - Piers Encountering Nature @ Pace University
 - Undergraduate & Faculty Research Showcase @ Pace University
 - Consortium for Computing Sciences in Colleges, Northeastern Region (CCSCNE) @ Quinnipiac
- Overall
 - Global team collaboration
 - Development practices / software
 - Contribution to the GSD project

