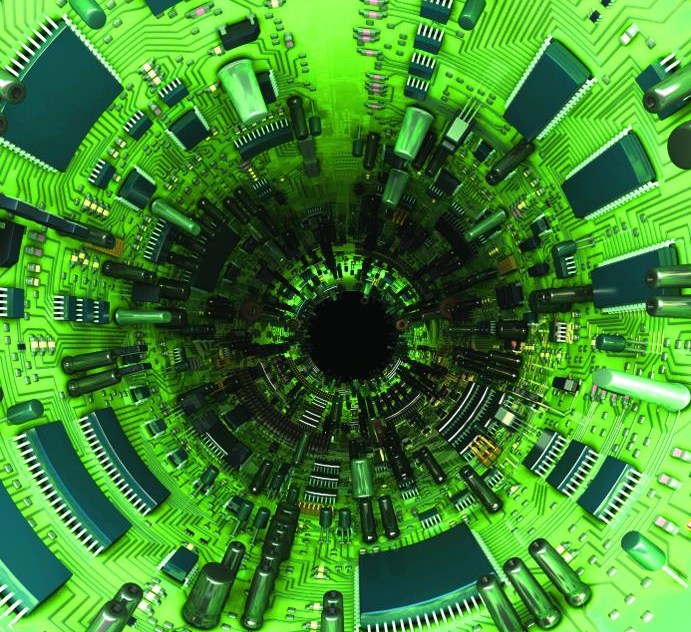
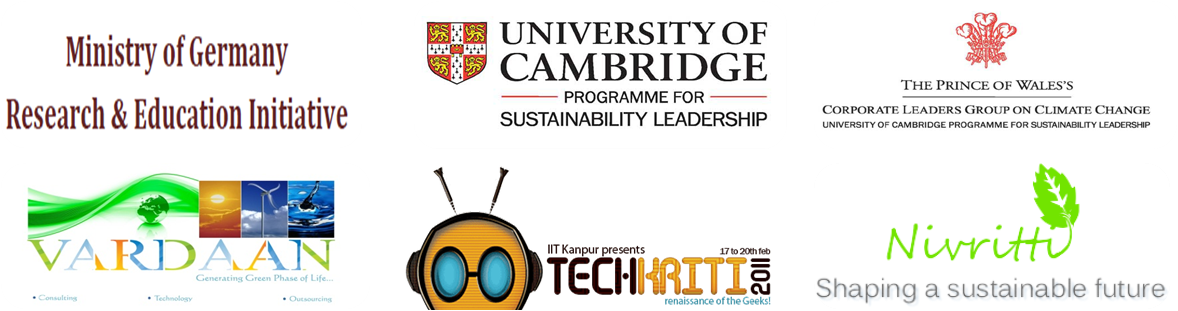
**Sustainable ICT for Emerging Economies Program**

**Mythology and Reality of the Digital Divide Problem**

**Associates / Signatories**

****

**Theme#3:**

**ICT Innovations with R&D**

National/International level

ICT & emissions

Technology innovations

“Nano” scaling

E-Governance/E-learning/E-community

Internet Technologies

Advance Systems & Network securities

Expert Systems: Modelling & Simulation

4G Technology

Neural Networks & Fuzzy Systems

Artificial Intelligence & Robotics

**Theme#2:**

**Different aspects of ICT**

Green Computing

-Cloud Computing

-Grid Computing

-Distributed computing

Communication Technology

Carbon footprints

Smart Grid Networks/Smart Utility

**Theme#1:**

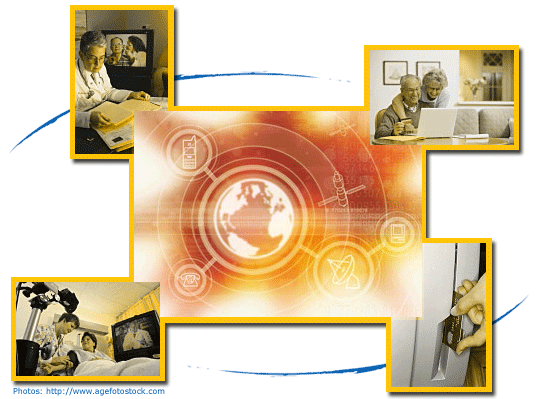
**ICT & Sustainability**

Technologies

Infrastructure

Supply Chains

End Consumers

****

Opportunities

Government

&

PPP

Case Studies

Impacts

&

Conditions

Flow of Training Program

Introduction to ICT

Barriers

&

Solutions

Hands-on-sessions:-

Cloud Computing

Green Computing

RENET

Sap based other software

**Theme#4:**

**Future Scopes & opportunities in renovated Green ICT**

Technical point of view

Business point of view

Innovations

Jobs/Employments

Government & PPP models

**Theme#5:**

**ICT and its Sustainable mode of application**

Rural area development application

Poverty alleviation

Smart Urbanization

System transparency

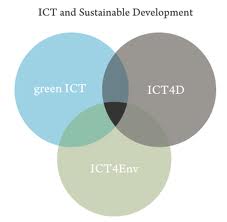
Local & Global achievements

Nano Technology applications

Women empowerment & development

Biotechnology & its application in ICT

1. **Introduction**



The implications of the advances in information and communication technologies (ICT) for developing economies are profound. ICT is not a cure to all the problems. However, the poor, the sick and the illiterate of the world have more to gain in relative terms than the billion people who already enjoy the benefits of this technology. ICT can be a powerful tool to facilitate and enable affordable solutions to-

* economic development
* individual development
* social development

The extent to which ICTs also affect progress towards environmental sustainability in an economy is an issue that is still under debate. There is, however, increasing evidence that significant opportunities and threats are involved as-

1. volume of transport relative to gross domestic product,

2. modal split of transport,

3. energy consumption and share of renewables,

4. greenhouse gas emissions,

5. municipal waste collected but not recycled.

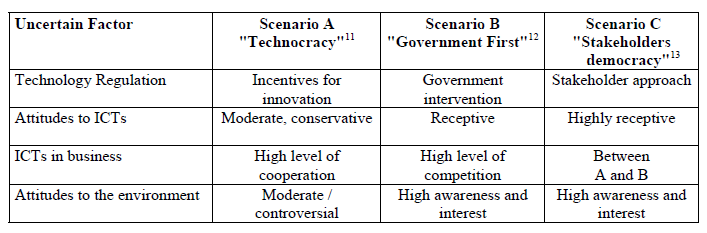
# These deserve more research and more attention in energy, climate change and technology policies.

* ICT applications
* ICT industry
* ICT use :
* e-business
* virtual mobility
* virtual goods
* waste management
* intelligent transport systems
* energy supply
* facility management
* production process management

1. **Impacts and Opportunities:**

* those created by the physical existence of ICTs and the processes involved (first order effects)
* those created by the ongoing use and application of ICTs
* those created by the aggregated effects of large numbers of people using ICTs over the medium to long term

1. **Uncertain factors:**



1. **Future Impacts of ICTS on Environmental Sustainability**

* The impact on the environmental indicators
* Freight transport performance
* Passenger transport performance and modal split
* Energy Consumption and the share of renewable energy sources in electricity generation
* Greenhouse gas emissions
* Non-recycled municipal solid waste
* The impact of different ICT applications
* Areas of impact ranked by significance
* Cross-cutting issues
* The rebound effect
* Accession countries

1. **Recommendations & Current Status of ICT application – user interface in:**

* Industry
* Transport
* Virtual Mobility
* Facility management
* Energy
* Greenhouse gas emissions
* Waste
* Cross-cutting issues
* Acceding countries
* Research and development
* Rebound effects

# Barriers to Entry

The reality is that in order to make this technology truly available, accessible, and affordable, there are many technical, social, regulatory and legal issues that need to be solved. Less than 10% of technical, economic and social problems of “what it will take to fully harness the power of ICT” relate to having a PC.

It is well known that **Digital Divide** really consists of many sub-divides:

* *Infrastructure Divide*
* *Access Divide*
* *Literacy Divide*
* *Language Divide*
* *Information and Knowledge Access Divide*
* *Jobs Divide*
* *Health-care Divide*
* *Entertainment Divide*
* *Demographic Divide*

1. **Necessary Conditions for Sustainable/Ubiquitous ICT:**

* existence of a clear value proposition
* accessibility
* affordability
* trustable and tamperproof

# The 4C Research, Development, and Demonstration Testbed Agenda

# The Four Columns (4Cs) that are essential to support Universal Utilization of ICT

* Connectivity
* Computer access
* Content
* Capacity building.
* **Case Study: The FiberAfrica Case Study**

## Computer Access Case Study: PCtvt

1. **Appropriate infrastructure and user - devices**

## Capacity Building

“Give man a fish and you will feed him for a day. Teach man to fish and you will feed him for life”

# Social, Regulatory and Legal Issues:

* Obstacles to the proposed vision of Free Internet - Disenfranchisement
* Current Internet Service Providers (ISPs) and incumbents.
* High costs
* High speed internet services in Emerging Economies vs Industrialized Countries.
* Tiny subscriber pool
* Limit innovation and convergence, e.g., disallowing unlicensed wireless or IP

##### **New Roles for Providers:**

**Free Road System** (paid for by taxes) creates the demand for cars, gasoline, motels, mechanics, auto supplies, repair shops etc. (all of which generate economic growth and jobs and, indirectly, governmental revenue from taxes),

**Vs**

Existence of a **Free Information Highway** will generate economic growth and value added taxes.

* **Government Roles** - Creation of fiber and wireless infrastructure
* **Private sector or competitive public sector companies** –
* Day-to-day operation
* Customer service
* Maintenance
* Upgrading of the infrastructure
* And many more

##### **Business models for compensating copyright and intellectual property (IP) owners**

# Conclusion

Such efforts should lead to plausible solutions resulting in the availability of tools and solutions for the whole world as “open source.” Such a community would:

* Role for free or nearly free broadband Internet connectivity.
* Multi-function information appliances
* Applications and content those are primarily meant for –
* rural or disadvantaged populations
* accessible to all citizens regardless of education, status or location
* Universal access to knowledge and know-how by creating a center (a National Digital Library?)
* Develop solutions to overcome language barriers
* Establish International Fellowships - “Capacity Building in IT”

**10.1 The primary issue -**

* Government
* Academia,
* Industry,
* Research
* Development agencies
* Policy statements and reports
* **Case Study:** *e-Choupal*

1. **Challenges and problems posed by 4Cs**

* Connectivity
* Computer-access
* Content
* Capacity-building

1. **Hand – on – session**

Simulation Softwares#1 – Cloud Computing

Simulation Softwares#2 – Grid Computing

Simulation Softwares#3 – Distributed Computing

RENET Software – Canadian Ministry

Processing Software – Supply Chains, SAP etc.

**Duration & Financial Details:**

**Total Duration:** 1 day depending on depth that is to be achieved, number of modules to be covered and time available with all stakeholders

**Certification:** The workshop is cerfitied by:-

**Signatory:** Sustainable Leader Program, **University of Cambridge**

**Partner:** Ministry of Germany Research & Education Initiative

**Affiliation:** Ministry of New & Renewable Energy [MNRE] affiliated associates

**Total Cost / Participant:** INR 400 / participant for 1 day

*It includes the following:-*

*- Practicum training charges*

*- Training Material (Handouts)*

*- Hands-on experience & take-away of the specially designed / customized international softwares / tools*

*- Participation Certificate (to all participants)*

*- An open offer for Our Re-investment programs*

*- Green Jobs/Internship network membership*

*- Future support to outstanding performers of workshop & also to college for all future sustainability related initiatives*

Best Regards,

Steffen Ferrell

**Co-Founder, GREEN ADD+**

[***www.greenadd.in***](http://www.greenadd.in)

# Annexure – Recent Associations:

# Organizations associated with Project Nivritti:

# 

# Vardaan Energy:

**Vardaan Energy is officially registered under the following & one of the few companies to have got the prestigious ‘Akshaya Urja’ recognition. It is a manufacturer of Solar Modules and LEDs and has successfully implemented more than 35 projects – for both the private as well as government sector.**

# http://www.mnre.gov.in/images2/ban5.png

# Some recent tie-ups / programs by GreenADD+:

**Harvard Sustainability Initiative, IIT Kharaghpur, IIT Bombay, IIT Kanpur, IIT Roorkee, BITS Pilani, IT-BHU, Yuva – International Youth Summit on Climate Change, NIT Warangal, NIT Durgapur, BITS Goa, Veermata Jijabai Institute of Technology Mumbai, Amrita University Tamilnadu, Indian School of Mines Dhanbad, Saastra University Tamilnadu, Delhi College of Engineering and along with that many other Institutions and Universities across country. GREEN ADD+ is the first of its kind of organization in India which is also associating with many Corporates/NGOs/Governmental Nodal agencies in the field of Sustainable Development.**

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