



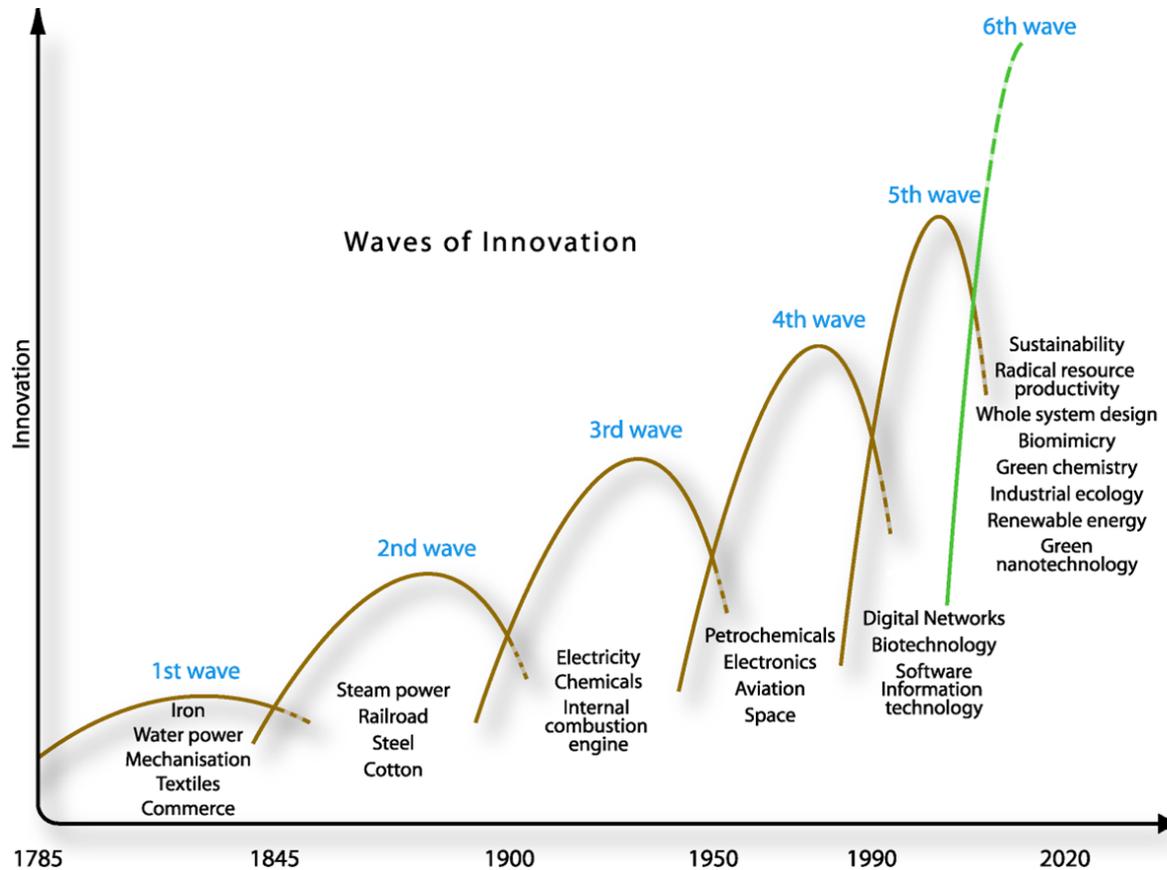
Update on Innovation in ORD

**Presentation to
EPA Science Advisory Board
Research Budget Workgroup**

*Jay Benforado
Innovation Team, Office of Research and Development*

March 3, 2011

Exciting Opportunities for EPA and ORD



Source: Hargroves, K. and Smith, M.H. (2005) *The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century*, Earthscan, London.

Innovation in ORD

Innovation is the development and adoption of new ways of solving problems and creating opportunities.

How can innovation advance EPA mission?

“Innovation transforms the useful seeds of invention into **[sustainable]** solutions valued above every existing alternative – that are then widely adopted **[to protect the environment and human health]** .”

(adapted from innovation definition by Braden Kelley, founder of Business Strategy Innovation)

Today will highlight three ORD innovation activities

- Pathfinder Innovation Projects
- Tools for Collaboration
- Open Innovation

1. Pathfinder Innovation Projects

Internal ORD competition -- Seed funding for innovative research

Streamlined Process – 10 weeks!

- 117 applications – good ideas, many teams that included EPA program and regional staff
- Three external panels (27 reviewers) -- *AA/ORD selections based on external reviews*
- Award announcement, 12 projects – January 31, 2011

Status

- Now in project startup phase
- Getting feedback on how to improve Pathfinder competition (Ideascale platform)
- Valuable ideas in projects not selected

Exciting Projects that Support EPA's Research Priorities

Examples: Innovative biological treatment of drinking water contaminants; intentional design of nanomaterials to facilitate decomposition; applying cutting-edge genomics to assessment of chemical mixtures and of bacteria in water distribution systems; new approaches to environmental monitoring using hyperspectral imaging on the International Space Station

2. Tools to Increase ORD Collaboration

Integrated Transdisciplinary Research requires broad, up-front participation in defining priority research problems, and breaking down boundaries between scientific disciplines

Open Government Initiative -- to increase transparency, participation and collaboration

- ORD working to apply these principles to research
- Will increase collaboration within ORD; with EPA programs and regions; with external parties

Current Activities

- Currently using *IdeaScale* , a collaboration platform for electronic conversations, to get feedback and input on research priorities and planning
- Will look for opportunities for expanded use of collaborative platforms
- Solicit input from internal and external groups on how to collaborate

3. Open Source Innovation

Research strategies are changing in both public and private sector organizations -- from NASA, DOD to Proctor & Gamble, Eli Lilly

Many new R&D platforms *(some examples)*

[Innocentive](#) - open innovation problem solving

[TekScout](#) - crowdsourcing R&D solutions

[IdeaConnection](#) - idea marketplace and problem solving

[Yet2.com](#) - IP market place

[PRESANS \(beta\)](#) - connect and solve R&D problems

[Hypios](#) - online problem solving

[Innoget](#) - research intermediary platform

[One Billion Minds](#) - online (social) challenges

[NineSigma](#) - technology problem solving

OSTP leading change in Federal gov't – America Competes Act, OMB Directives, President's Strategy for American Innovation

Open Innovation Examples:

- NASA: Forecasting solar flare events
- Oil Spill Recovery Institute: Separation of frozen oil from water
- Rockefeller Foundation: Solar water treatment; rainwater harvesting

The Network is the Solution

Chances are that someone is already working on your problem!

Next steps on Open Innovation

- **Work with ORD national program directors and EPA Program Offices and Regions**
-- to identify challenges of highest importance
- **Training** – on how to write challenges to maximize likelihood of success
- **Coordinate with EPA’s Science and Technology Policy Council**
- **May create an environmental pavilion “sponsored” by EPA** -- where others can post challenges
- **Potential for Inter-Agency environmental pavilion?**– exchange information; look for solutions across Agencies

Also, working to create links with other innovators

- *State and tribal government (e.g., Environmental Council of the States)*
- *Federal agencies (e.g., HHS, DHS)*
- *Other innovative organizations (companies, NGO’s, etc.)*

ORD's Innovation Infrastructure

Objectives

Support the inherent talents of ORD scientists and engineers in creative problem-solving

Champion the value of innovation to advance EPA mission
– *as a tool for our reorientation around sustainability*

Create “signature projects” that demonstrate innovative problem-solving approaches

Encourage collaboration with external parties to help solve environmental problems

Look at issues from different perspectives
– *leapfrog ideas, systems thinking, transdisciplinary research*