THE CASE FOR TECHNOLOGY ASSESSMENT

etc group
action group on erosion, technology and concentration

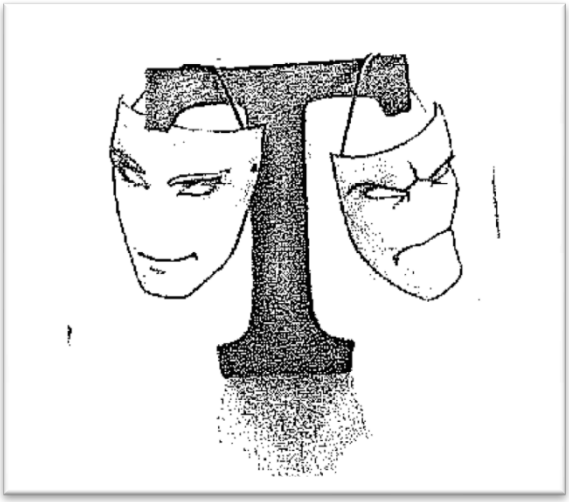
BAD TIMING?

Know-How — Technology Transfer

Know-What — Technology Assessment

Know-Why — Who Benefits?

The timing is never right for technology assessment. It is always too soon, too late, too much, too fast or too slow. Here's how the arguments go...



TOO SOON: The technology is too embryonic to monitor, they argue, and regulation will stifle its incipient potential. Governments and societies are assured that significant deployment is far off because fundamental scientific knowledge is lacking and commercialization is not yet feasible. In reality, technological deployment often comes long before scientific understanding. The energy and chemical industries, for example, used chemical catalysis for decades, spending billions on manufacturing facilities that would depend on it, without any clear understanding of the science behind it.[1] A 2007 report from the European Environment Agency estimated that only 14% of more than 2000 high volume chemicals in production have basic toxicology information; 65% have less than base-set data, with 21% having no data at all.[2] Since the 1940s, US agribusiness has been annually dumping as much as 25 million pounds of antibiotics into animal feed without understanding how the antibiotics ratchet up livestock weight.[3] Likewise, the biotech industry has been selling modified DNA for decades while scientific understanding of the double helix continues to evolve.[4] Industry doesn't need to know what it's doing in order to make money, and even more alarming, technologies can turn a profit even when they fail. Industry can use the hype surrounding a technological breakthrough to sidestep anti-competition and other regulatory barriers, intimidate competitors, and create demand for an inferior or ineffective technology.

TOO MUCH: Industry also argues that there is no single technology...that there has been a misunderstanding (or at least a mis-naming)... there is really a suite of technologies that can't possibly be monitored or regulated collectively. In a debate before EU Parliamentarians a few years ago, the head of the European NanoBusiness Association argued that there was no such thing as nanotechnology – prompting the obvious question as to when she was going to change the name of her trade association.[5] At another meeting on biotechnology outside of London, the negotiator of a major biotech enterprise complained bitterly that environmentalists had given them the term "genetic engineering" and had to be advised by his colleagues that the term had come from industry.[6] What was first 'Genetic Engineering' later became 'Genetic Modification' en route to 'Living Modified Organisms' or 'Functional Foods' (raising new questions about the functionality of everything else we've been eating!). Despite everything, BIO – the Biotechnology Industry Organization – soldiers on searching for linguistic loopholes. 'Geoengineering' is already transitioning to 'climate management.'

RIO+20 AND TECHNOLOGY ASSESSMENT

Technology Transfer ("Know-How") without Technology Assessment ("Know What") is like buying airplanes and training pilots without building airports and training air-traffic controllers. ETC's series of issue papers and case studies call upon Rio+20 to establish UN-level Technology Assessment either through an Office of Technology Assessment attached to the UN General Assembly or through a specialized unit attached to a new sustainability facility associated with ECOSOC, UNCSD or UNEP.

TOO LATE: Once the technology is fully invested and deployed, however, the argument is that it is much too late to withdraw it. Absent a major and politically-embarrassing catastrophe, industry argues that regulations, or recall, will undermine national competitiveness, destroy jobs, devastate the economy or smother innovation. These – essentially political – arguments intimidate regulators and policymakers. During the 20th century there was an average 30-year gap between the early warnings of scientists and the late listenings of governments (see table). Products and technologies are almost without exception only withdrawn when (1) industry has found an alternative product or process that it can control and profitably exploit; and (2) when it has fully written off – and is ready to replace – its manufacturing facilities to adapt to the new requirements.

TOO FAST: Even when a technology – or one of its products or processes – is found either too risky or reprehensible to remain, industry has been remarkably successful at delaying change until it has wrung out all the profit it can from the old practice or product. These delays have cost both lives and money. Industry succeeded in delaying the removal of a long list of toxic chemicals such as PCBs, halocarbons and DES until profitable alternatives were comfortably available.[7] More recently, when lead was found in toys manufactured in China, the US government gave retailers almost a year to pull them off the shelves. Because of the adverse publicity, the big retailers sold their Chinese toy consignments to small retailers who took advantage of Christmas sales to unload their toxic inventory.[8]

TOO OLD: Industry also argues that the so-called "new" technology is nothing more than a modest evolution of very old technologies. Biotechnology was just a slight advancement on beer, wine and cheese making, for example. Transgenics is just the next modest step in plant breeding and DNA crosses species boundaries all the time. Glassblowers in Ancient Rome used nanotechnology and climate change (and, hence geoengineering) began with the mass killing of large mammals, the smelting of copper for coins, and the 12,000 year long spread of agriculture. The Dutch chemical giant, DSM, was so convincing about nanotech's antiquity that some participants at a UN chemicals meeting accused the company of being "on the cutting edge of the Bronze Age."[9]

REFERENCES

1 John K. Smith, "The Catalyst Club – Contentious Chemistry and Confounding Innovation," Technology and Culture, Vol. 52, No. 2, April 2011, pp. 310-334.

2 European Environment Agency, Full report: Europe's environment: The fourth assessment, 2007, p. 129.

3 William Boyd, "Making Meat: Science, Technology, and American Poultry Production," Technology and Culture, October 2001: Vol.42, No. 4, pp. 631-644.

4 One recent example: R. Barrès, J. Yan, B. Egan et al., "Acute Exercise Remodels Promoter Methylation in Human Skeletal Muscle," Cell Metabolism, Vol. 15, Issue 3, 405-411, 7 March 2012.

5 Pat Mooney debated the head of the trade association in the European Parliament in Brussels in 2008.

6 Pat Mooney participated in this meeting outside London, UK in the spring of 2001.

7 European Environmental Bureau, Late Lessons from Early Warnings: The Precautionary Principle 1896-2000, Environmental Issues Report, 2001.

8 Jane Spencer and Juliet Ye, "Toxic Factories Take Toll On China's Labor Force", Wall Street Journal electronic edition, January 15, 2008 and also Elizabeth Williamson, "Political Pendulum Swings Toward Stricter Regulation Safety Scares, Crisis In Housing Aid Shift," Wall Street Journal electronic edition, March 24, 2008; and Joseph Pereira, "CDC Licenses Technology to Remove Lead From Skin," Wall Street Journal electronic edition, February 18, 2009.

9 Pat Mooney participated in the meeting with DSM in Dakar Senegal in September 2007.