



Sosioteknologi Informasi

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April 2006
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Referensi: dari berbagai sumber



Sosioteknologi (wikipedia)

- Sosio-teknologi adalah bidang kajian baru yang berusaha melihat pengaruh evolusi teknologi dalam kehidupan sosial
- Sosio-teknologi kira-kira lahir dalam lingkungan di mana bersamaan dengan lahirnya postmodernisme di mana orang mulai melakukan pembagian disiplin ilmu baru
- Didorong adanya keprihatinan langsung atas 'liarnya' perkembangan teknologi yang sering menimbulkan pertanyaan-pertanyaan yang berhubungan dengan moralitas dan kehidupan sosial
- Sosio-teknologi memiliki relevansi khusus di negara-negara berkembang seperti Indonesia dan banyak negara lainnya.

Sosioteknologi (wikipedia)

- Sosioteknologi adalah ilmu yang merupakan relasi ilmu sosial (social sciences) dengan teknologi (engineering)
- Teknologi dilihat dari berbagai perpektif
- Intinya adalah berusaha kritis terhadap keberadaan teknologi yang biasanya dipandang deterministik-positivistik, khususnya di negara-negara yang "sepertinya" menjadi konsumen abadi dari teknologi seperti Indonesia
- Teknologi dipandang sebagai sebuah produk budaya yang tidak netral, tidak bebas nilai
- Teknologi merupakan ungkapan suatu kebudayaan tertentu dimana teknologi itu lahir
- Dalam produk teknologi itu terkandung nilai-nilai, budaya, mistis, moralitas, hingga kepada pola kerja, pola perilaku maupun pola produksi
- Dalam transfer teknologi, pilihan-pilihan teknologi yang dilakukan harus mempertimbangkan sangat banyak faktor, terutama dampak-dampak dari keberadaanya di lingkungan

Sociotechnology

- Pfaffenberger: symbiotic relationship between the development and use of technology and the social setting within which it occurs
- Sociotechnology = society + technology
- Technology influences society and, vice versa, society shapes technology
 - Patterns of technology are largely influenced by the condition of the societies in which they exist
 - Technology is a causal force of social change
 - Technology as a social phenomenon

Sosioteknologi

(<http://www.s-j-c.net/English/SandT>)

- A sociotechnology is a field of study that makes use of scientific findings about social behaviour in order to modify this behaviour or prevent such
 - Support the positives
 - Prevent the negatives
- From the scientific perspective these are the same sorts of *problems*

Sosioteknologi

(<http://www.s-j-c.net/English/SandT>)

- Sociotechnology vs. Science
 - Science ≠ craft, ex. Canoe made by native Indian and fabricated ship made informed by scientific knowledge
 - Normative vs. positive. There is something more than science ⇒ Moral
- Ethic and Technology
 - Ethic: rule based on law principle (social)
 - Technology: rational action with plan
 - Plans in technology have to be detailed but not stifling - not all intended outcomes may occur, nor all outcomes intended
 - Example: A computer program, which runs out of disk space suddenly, should not erase itself from memory silently and announce nothing to the user
 - Technological proposals must be public to some extent
 - Technology need not always replace crafts
 - **We must decide ourselves what sorts of technology we must have**



Sosioteknologi

(<http://www.s-j-c.net/English/SandT>)

- Ethics and technology \Rightarrow sociotechnology
- Problem in ethics:
 - social sciences being used are often underdeveloped (compared to technology advancement)
 - humans, being social animals, are "close to" social matters
 - may not be able to take one's proper distance from the matter they are studying
 - objectivity vs. partiality
- Can it be? Ethics becomes a technology



Sosioteknologi

(<http://www.s-j-c.net/English/SandT/>)

- Why this matters:
 - social proposal to have a minimum of social planning is itself a plan
 - "*We have to create the future, or others will do it for us.*" (Susan Ivanova, Babylon 5: "Sleeping in Light".)
 - Technophobia (fear of technology) is as dangerous as extreme technophilia (love of technology)
 - Deciding on technological proposals required technological (and hence scientific) literacy
 - It also requires some degree of economic and political democracy
 - This is partially a matter of education
 - Education = protosociotechnology + psychotechnology

From sociotechnology to science and technology policies (<http://www.s-j-c.net/English/SandT>)

- What is science and technology policy?
- Why do we need a science and technology policy?
- What is the scope of “we”?
- Relations between other aspects of society and S&T policy

What is science and technology policy?

- A science and technology policy (system of policies forming a larger policy): the system of resources, individuals, social, etc. devoted to scientific research, technological research, technological diffusion, and so forth within a given social system
- It might include subsidies of various kinds, maintenance of state corporations or universities, awards for scholars and students pursuing education and research in science or technology, import quotas or tariffs on artefacts manufactured or designed abroad, etc.

Why do we need a science and technology policy?

- S&T policy Is so omnipresent - if often invisible - that we need to consider them carefully when planning our futures
 - If we value pragmatism, we might favour a policy that gives little or no support for those doing research with no foreseen non-cultural value.
 - in abstract algebra, metallo-boron chemistry, or the history of totem poles in the Pacific Northwest
 - Because they aren't of economic or political benefit directly, and instead are pursued out of purely cultural interest, our attitude towards them reflects our attitude to culture in general
- We have to decide where to obtain our technology from (including, from nowhere, if we really wish to take one extreme option), where to employ people interested in cultural pursuits, etc.

What is the scope of "we"?

- The scope of "we" is difficult to determine!
 - In Canada, there are two levels of support (the federal and various provincial governments) for the most part for science and technology generally, with a third available at the level of industry or universities in many cases ⇒ the people via proxies
 - In Indonesia?
 - "We" should be closer to home
 - "We" are everyone

Relations between other aspects of society

- Education
- Economic policy
- Environmental policy
- Local development
- Universal attitude

Education

- In order to evaluate (or create) science and technology requires some degree of education
- Reflection on science is also important - and so education in what is broadly speaking the philosophy of science is also valuable
- Education requires a large social infrastructure
 - Policy via educational policy quickly shows how considering one aspect of social life quickly balloons out into other considerations
- If we value industry and "high technology" our education system will reflect this. If we do not value technology we might find that our education system is underdeveloped or largely non-existent

Economic policy

- An economic policy that does not find money for basic research in a particular domain will very quickly find that it is lacking in it, and the corresponding technologies will be hard to come by
- Technology policy affects and is affected by trade tariffs, patent legislation, and protectionistic mechanisms
- A social system (usually a country) has to decide what to develop locally and what to develop based on what is available on world markets, and what to simply purchase outright
- The same applies to knowledge, that now is also “for sale” (universities & school, for local & foreign student) ⇒ where the economic policy, the educational policy and the S&T policy all intersect.

Environmental policy

- We have to decide how industry and hence technology are allowed to affect the environment
- We should use the best available means to understand the environment and so a S&T policy should reflect that
- Should we mine for minerals on our soil?
 - This is an environmental policy question, because runoff from the mine might affect fishes in a local stream, or uproot trees in a nearby forest, etc.
 - This is also a technology policy question, as we must decide how (if we are to mine at any rate) to minimize this damage (if at all), how to best perform extraction of minerals, how to manage the mine's employees, etc.



Local development

- Any policy has a local scope
 - A university or a think-tank can change the entire character of a town. Ithaca is said to double in population when Cornell is in session
- The knowledge produced as outcome of the S&T policies will also reflect local interests and abilities
 - At McGill (Canada) - the social science there is local in some sense
 - Dalhousie has an oceanography department - a department that would be somewhat harder to find at the University of Alberta
- Localization for technological component
 - In Japan the Super Nintendo was positioned more in the "home computer" market. In US, it was regarded more as a toy or "entertainment systems"
- Selecting local materials can be important technological policy choices
 - If one wants to make waterproof clothing for fishermen, it makes sense to find materials available reasonably locally



Universalistic attitude

- Science and technology also stress a universalistic attitude in its practice
 - Newton's laws of motion apply (to the extent that they do) independent of whether we know them or not
 - This universalistic attitude is illustrated well by the case of Abdus Salam and Steven Weinberg. These two (and another) shared the Nobel Prize for physics in the 1970s. Salam is a believing Muslim from Pakistan; Weinberg is a secular American. Yet the piece of the world they explored united them and indeed all people
- Unfortunately, policies can affect this attitude
 - Embargoes
 - Protection

People and their knowledge traditions

- Some people want to remain isolated in some respect or other - the universalism of science is either regarded as false or just undesirable
- Science is not universal
 - There is a role for locally developed knowledge
 - Some local knowledge (what we know) is ripe for testing and integration into science by extending it or modifying it in some way

Conclusion

- The relationship between technology and society is not a one-way direction
 - There is a role of social, cultural, and political factors in the construction of technology
 - Treating technology as a social product demystifies technology and places it in a glass box where we can analyze it comprehensively
- Revealing how social, cultural, and political factors work in technical changes enriches the way we perceive technology and reminds us of the importance of social systems in the creation of technology
- Building technology solely from the materiality and technicality of technology is not sufficient because social systems and technical systems are tightly interwoven in the work of technology
- Understanding social systems could lead us to the wise and just development of technology for society



Sosioteknologi Informasi

- Sosioteknologi yang khusus untuk bidang Teknologi Informasi
- Kajian pengaruh evolusi teknologi informasi dalam kehidupan sosial
 - Berkaitan dengan bidang yang memanfaatkan teknologi informasi ≈ semua bidang
 - Menunjang akselerasi pengembangan teknologi yang "positif"
 - Menghambat teknologi yang "negatif"
- Bagaimana caranya?
 - Masukan: kelayakan, dampak, teknologi
 - Keluaran: kebijakan, aturan, sangsi, teknologi
 - Proses: ilmu & teknologi
 - Parameter: etika, moral, keselamatan, dll.



Sosioteknologi Informasi

- Topik Hangat:
 - RUU APP
 - e-gov
 - Cybercrime