

Changing the change

Design Visions, Proposals and Tools

An international conference on the role and potential of design research in the transition towards sustainability

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NEW OUTPUTS POLICIES AND NEW CONNECTIONS reducing waste and the value added applications of outputs

Abstract

It is clear how in recent years two basic environmental, economic and social issues have become increasingly problematic: on the one hand we are seeing a continuous rise in the price of raw materials and a high demand for recyclable materials on international markets while, on the other hand we are producing more waste. In this situation it becomes almost obligatory to find solutions for recycling waste in the most profitable ways possible. In the same legislation on waste, some important developments are aimed at favoring the entire issue of recycling. The definition of two new concepts, "sub product" and "secondary raw material" represents an explicit effort to give autonomous legal status to that which lies somewhere between virgin raw materials and actual waste. The purpose of the research carried out at Industrial Design-Politecnico di Torino in collaboration with ZERI, Corep and eHORIZON s.p.a., is to concretize the proposal for a change in perspective. In a world of growing complexity like the world we live in today and, more importantly, the future, we must extend our gaze to the entire production process, considering as a whole and not only as a sequence of actions independent of each other that aim solely to produce a good. The subject of this study is therefore not only products but also production cycles with the intention to create a system similar to nature where the concept of waste does not exist and where even excesses are metabolized. Therefore the outputs of a production process can become raw material in other processes. Enhanced with new values the outputs become a resource and these new resources are used to produce goods and services and favor the birth of new local enterprises. In this sense all the industrial production processes should reduce their use of nonrenewable materials and evolve towards less energetic processes, producing outputs that are uncontaminated and reusable for the qualities they contain. To prefigure the use of outputs as resources in a new process, the quantities and qualities of the "waste" produced are examined attentively in a specific territorial setting. They can be organized according to their physical-chemical and biological properties. An optimal application of the outputs, even with the help of currently used or innovative technologies, brings revenue and benefits to the company and the local economy. The results obtained thus far regard a research and analysis instruments that make it possible to create new relationships between local companies. In particular it will demonstrate the considerable differences between the current production processes having a linear structure and the new processes of an open industrial system along with its advantages. The latter is based on this sequence: output quality > output reutilization > resources > profit. Since we have a design methodology that achieves the potentialities associated with the quality of the output, it is necessary to make concrete these potentials by creating a system of available resources and potential users. In the case at hand it would require defining and designing a database, developed by Neosidea Group, that could be managed and consulted and that would acquire and systemize the information regarding the outputs being produced by various companies in terms of quantity, type, quality, physical location on the territory, and information regarding the other producers located on that territory. The database has a dual function: on the one hand it's possible to determine which local

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companies might be able to use outputs as resources in their production process; on the other hand the database can tell a company which companies produce outputs that could be exploited by them as resources. Therefore from material data putted in the database is possible to obtain some information about its reuse. This process, viewed from a systemic perspective, becomes important during the company feed back processes: indeed if reuse information are not get, there are some problems in the production process and it is necessary to change process and materials in input. Nothing is lost because the reciprocal output>input system becomes evident and multiplies the business opportunities of a system that becomes ramified, dynamic and multipolar and which appreciates the peculiarities, experience, know-how and local resources while minimizing dependency on external actors.

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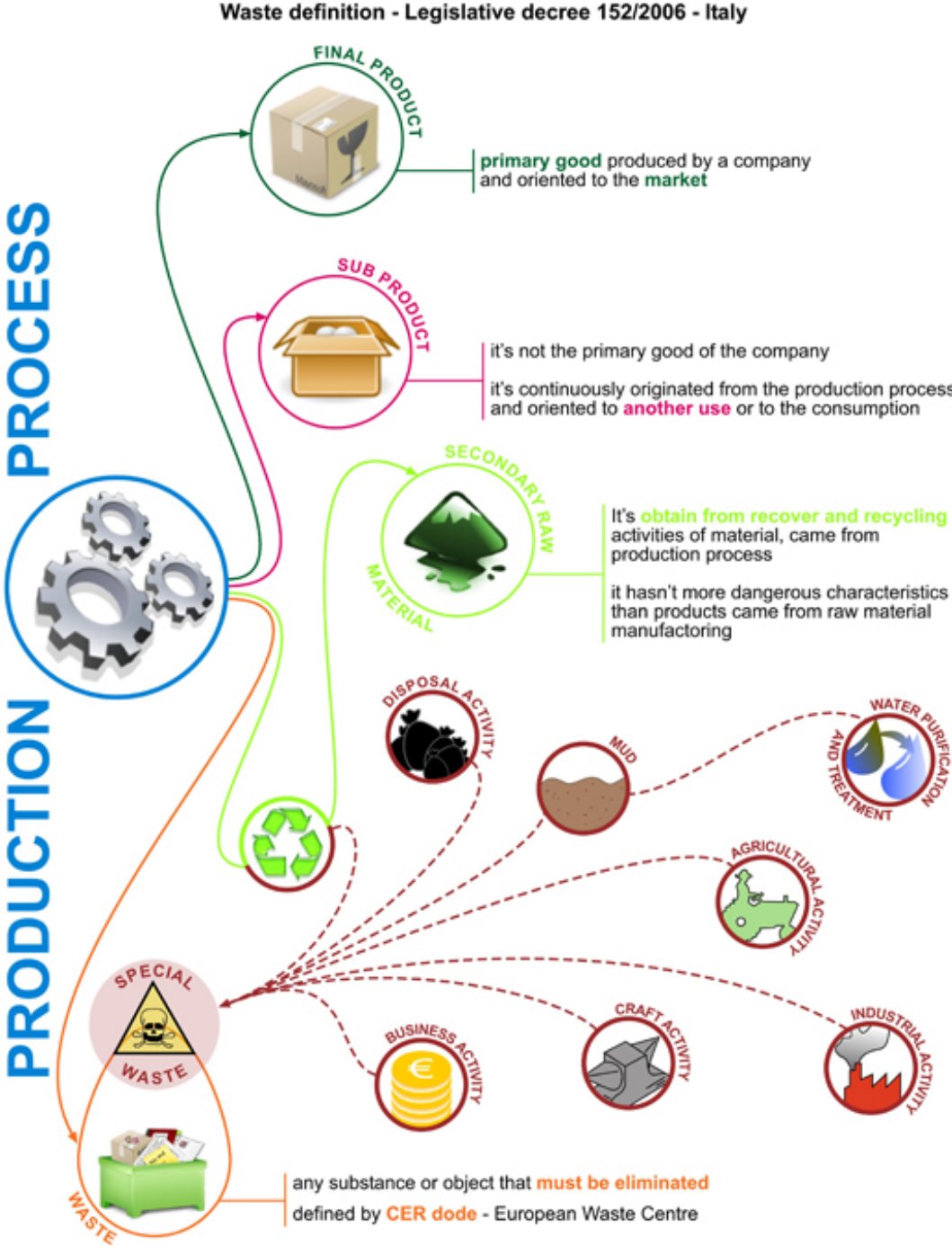


Fig. 1: Scheme of the output obtained from the actual linear production process and from other activities.

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