
Editorial

Giancarlo Barbiroli

Business Science Department,
Area: Technology and Resources Valorization,
University of Bologna,
Piazza Scaravilli 2, 40126 Bologna, Italy
E-mail: giancarlo.barbiroli@unibo.it

Biographical notes: Giancarlo Barbiroli is a full Professor of Technology of Production Cycles, and of Environmental Management, at the Faculty of Economics, University of Bologna, where he has been Dean in 1984–1993. He is Honorary Editor for Theme 1.46 Principles of Sustainable Development for the UNESCO Encyclopedia of Life Supporting Systems. His research has always been oriented to carry out techno-economic analyses on production activities, to draw general assumptions from the measurement of the manifold aspects of performance (materials, energy, environment, quality). He is author of 200 papers published in international journals, and of 14 books.

The utilisation rate and value of durable good should be considered a central aspect of a new strategy in all economic and social systems, in order to increase resource productivity significantly.

At present, the majority of durables in the industrialised world has in general low utilisation intensity, and moreover, with often less-than-optimal life spans from a sustainability point of view, as a consequence of manufacturing industries focusing on fast replacement of durables to maintain high production volumes in markets with low profit margins. Also, the large majority of buyers and users are used to accepting these goods available in the markets without taking sustainability criteria into account in their purchasing decisions. The electronics and automotive industries are obvious representatives of this status quo.

This situation has even worsened with the new re-industrialisation phase, started in the 1980s.

In response, in order to pursue a higher resource productivity of both energy and materials, a significant paradigm shift in production and utilisation patterns is considered to be essential by many scholars in the world, to fulfil desired levels of global sustainability, as increasingly advocated by environmental scientists. Improvement of the utilisation intensity of durable goods is often mentioned as an essential part of these new patterns.

To achieve this aim, all durables should be devised, designed and produced with new suited features and functions. It is widely acknowledged that “producing and selling functions” rather than products, and designing product life cycles rather than just products, is the main stream of all choices leading to at least a factor ten productivity increase. The major consequence to this change will be the reorientation, by the

manufacturing industries, of their production and management choices, and by buyers and utilisers, of the utilisation attitudes.

Definitely, a real revolution is needed, where economic development should be based on closed-cycle economic systems, and where service and technical assistance activities should prevail over the producing one, and as such be fit for optimisation of the utilisation intensity, life time and value of goods. This is likely to contribute to reduction of the use of natural resources and its associated environmental impacts.

The Theme of this special issue on 'Innovative Concepts in the Perspective of Maximising the Utilisation Rate and Value of Durable Goods' has been chosen to further develop this subject, and high level researchers of the various related aspects have accepted to contribute to it with their latest findings.

The aspects dealt with in the 12 papers regard: approaches to optimise design and use of durable goods, organisational, localisation and design elements in obtaining sustainable products, incentives and framework for increasing the capital value and use rates of durables, the total performance analysis of deterioration and obsolescence of product value, models on replacement behaviour, technology-driven product platform development, remanufacturing and product design, new technologies for active disassembly, enduring quality, eco-labelling and product development, academic topics for eco-design implementation.

This work is dedicated, with appreciation and liking, to their enthusiasm and unselfishness, and is also dedicated to all young and more experienced scholars who, in any place of the world, are committed to these subjects, in an innovative and nonconformist way, often with personal sacrifice and risk, with the intention to create with them an ideal, intellectual and congenial linkage.