Green Economy Report

2014

MS

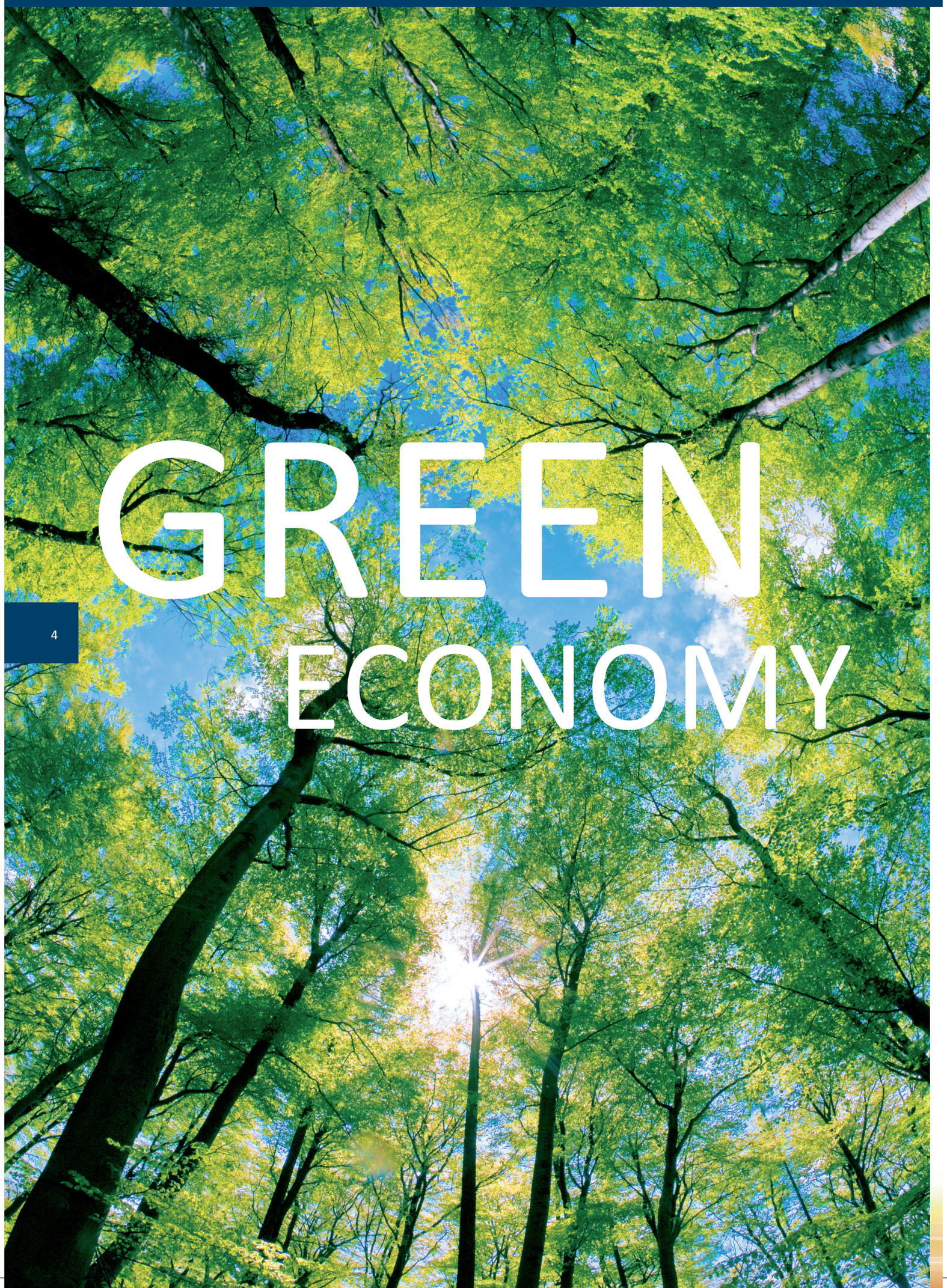
PRINTING SOLUTIONS

a DOVER Company

Index

Green Economy

Digital Printing vs Traditional Printing


GREEN
ECONOMY

GREEN ECONOMY WHAT IS IT?

Industry today is paying more and more attention to the so called “green economy” implications.
But what are we talking about when we say “green economy” or “green technology” or also “clean technology”? We refer to the application of one more of environmental science, green chemistry, environmental monitoring and electronic devices to monitor, model and conserve the natural environment and resources.
More than that the mission of the industry today is to curb the negative impacts of human involvement (more and more expanding owing to the increase of the world population and of its consumptions). The means of the industry to this aim is the exploitation of a class of electronic devices (or chemical or mechanics) that can promote sustainable management resources, that is the core of environmental technologies.

WHERE IS IT APPLIED?

Some of the fields where the “green” industrial research is oriented (and particularly in machinery production) are for example renewable energy, water purification, air purification, sewage treatment, solid waste management, energy conservation.
These definitions explain by themselves.
In the latest years there has been a general acquaintance and agreement on the fact that existing technologies have proved damaging for health and environment, often very expensive (think of the world before electronics) with consequent waste of economical and natural resources.
The innovation developing alternatives to existing technologies is the way of saving the environment and of improving, in the same time, the quality of life of human mankind.
In the same time it is important to meet the needs of society in ways that can continue definitely in the future without damaging or depleting natural resources: in other words meeting present needs without compromising the ability of future generations to meet their own needs.
It is obvious that it is not possible to give up to most aspects of modern life even if we are conscious of the damages that they can produce on the environment.
At least unless you are not offered an alternative which at reasonable cost can guarantee the same quality of life or even better.

HOW CAN IT BE APPLIED?

Sometimes it is only a matter of education as waste recycling can demonstrate.
The results obtained reducing waste and pollution simply by changing patterns of production and consumption, even if not spread enough, are very eloquent from a theorycal point of view.
But obviously it is to the industry to offer new solutions to consumers that keep, or, better, improve, the production systems and products.

WHICH IS THE PRICE?

Experience shows that innovation, besides meeting consumers requests, pays also from an economical point of view.
In other words innovation is business both for those who propose it and for those who accept it.
Surely cars of today are less polluting than ten years ago and houses are built with criteria of saving energy wastes more than some years ago (progress in the direction of green technology have been very quick): and surely producers have not suffered economically for proposing new ideas as well as the utilizers have received benefits from these innovations.
On the contrary we have seen that those producers who did not accept this evolution had to surrender and disappeared.

HOW DID PRODUCTION PHILOSOPHY CHANGE?

For historical reasons the production philosophy in the past was oriented to the quantitative increase of production; today this is no more considered sufficient to give an answer to the request of the consumers. A largely spread environment sensitivity goes in the direction of asking more environment friendly products in every possible field, from the automotive to the building, from the chemistry to the textile.

Textile processes (one of the most polluting in the past) offer new products able to replace other materials employed in other fields (think of technical textiles applied from agriculture to aeromotive) with great advantages on the exploitation of raw materials and their waste in the environment.
And also with great satisfaction of textile end users who can gratify themselves with materials answering their requests of comfort and durability.

WHICH ARE THE SIDE EFFECTS ?

Apart from the advantages coming from the innovation on the environment we must underline the positive results in the occupation.
Research is a labor intensive field: and of highly qualified labor.
Every innovation has as a consequence further innovation: a new engine besides being less polluting requires different cars using different materials, new roads with different characteristics, technicians with updated training and preparations, workshops with more and more advanced equipment.
And, last but not least, we must also remember that green technology has a great positive impact on the processes with benefits for those who are employed in these processes: the attention to a “green” way of producing has also the consequence of working in healthier conditions. Work situations of last century in chemical or textile factories or electromechanical are no more thinkable (even if much remains to be done). We could say that there is a correlation and may be a synergy between the good quality of an environment and the human situation of those who live in it. Today it seems difficult to associate a country with a high level of respect for the environment with a very low system of life of its inhabitants.
A modern society, when thinking of its future, cannot set these aspects aside. That is why many people today consider an investment in the green economy is a sure way to success and to development of a society.

DIGITAL PRINTING VS TRADITIONAL PRINTING

WHAT IS DIGITAL PRINTING?

Digital textile printing is described as any ink jet based method of printing colorants onto fabric.
In the optics of "green technology" digital printing largely overcomes the traditional printing.
Less power is required and less water because of the absence of fabric washing. There are no screens or printing rolls and consequently no washing of them. Less room is required owing to the different sizes of digital machines and traditional ones and the non necessity of storing screens or cylinders.

HIGH PRODUCTIVITY IN PROGRESS

The evolution of technology allows larger and larger printing production in shorter and shorter times and the limits are far from being achieved: think that in 2007 40 days were required to print 30.000 linear meters in digital whilst 9 days were sufficient in 2009 and today only 12 hours are requested and will be less in the future.
According to the machines employed in the process, the production can be upgraded from 100 linear meters per hour to 75 linear meters per minute.
Considering that the digital taste is growing every day in the style studios a right partner able to support the customer growth offering a complete range of products is largely advisable to exploit all the possibilities and expectations in DTP, with unlimited perspectives to express creativity and profits.

GLOBAL DTP MARKET

The worldwide textile printing market has grown in the latest 10 years at a rate of 30% year reaching to a production of 1 billion sqm and representing a share of the 4% of the market of printed textiles with a future perspective of a growth of 30% in the next ten years.
In absence of exhaustive data some journalistic sources estimate that the textile screen printing market could be around 29 billion sqm (or 35 according to other sources). The digital printing should be about 1.5% of this figure but this is just an indicative figure.
The geographical breakdown of the digital textile in the traditional textile printing market is not known in every detail, but, roughly we can accept that the conventional printing market largest share can be located in:

A completely different situation can be observed in case of digital printing (the more advanced technology and up to now accessible only to more evolved areas) which sees Europe with a share of 70%, America with 15% and Asia (15%).

EVOLUTION OF DTP AND COMPARISON WITH TRADITIONAL PRINTING

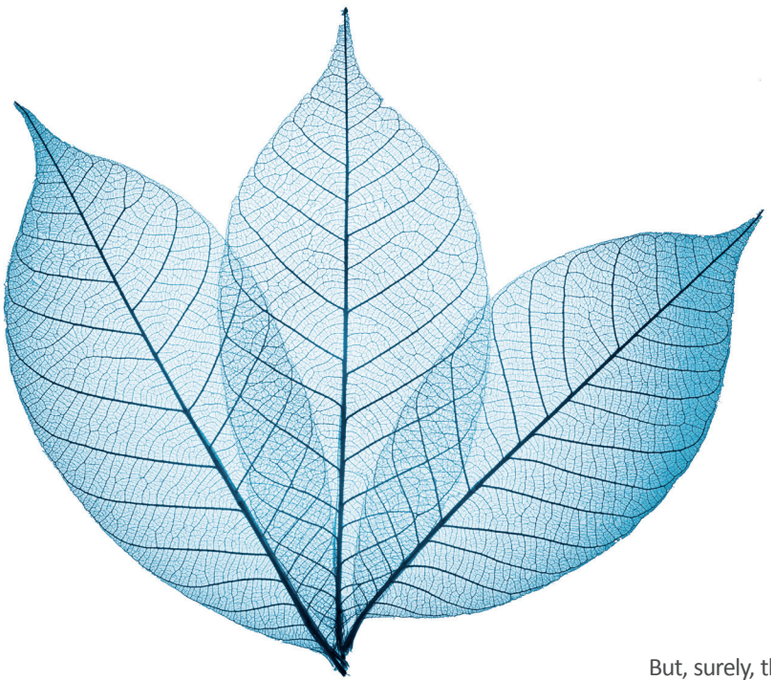
To remain in the spirit of this presentation it's very probable that also a more responsible sensitivity to environment care has played an important part in the diffusion of digital printing for the advantages connected to its lesser impact on the environment and to the economy of the processes.
Even if the digital printing is still a small sector if compared to the traditional one, we observe that a fast conversion to digital is taking place, first in Europe but slowly also in other areas, in all sub segments.
Digital is replacing flat screen printing machines due to similar coloration costs and production speeds: the fastest growing sector is wide format apparel on these new industrial inkjet machines but also the niche areas as home textiles, automotive fabrics, outdoor applications are developing.

The worldwide textile market is characterized by a decreasing of orders for design accompanied by the shift to higher value of the products and by a shortening of the fashion cycle. Not only, we must also pay attention to shorter lead times, price pressure continuously increasing with growing costs for sampling and small orders. Besides, environmental pressure is increasing more and more, even if not well perceived by everybody.
It is clear that the answers to these problems must be searched in processes that only new technologies can satisfy with their flexibility and different attention to costs and production times.

ENVIRONMENT TECHNOLOGY

We have already hinted to the fact that DTP is a successful resource in the field of "green" technology: its contribution to the reduction of waste in dyes and chemicals can be exemplified by the few g/sqm consumption with low unfixed dye amount to be removed. Besides let's underline that, differently from the traditional printing systems, no color kitchen is required with all the problems and costs connected to its employment.

Processes requiring less water, energy, pollution are the pluses recognized to the use of digital printing as far as the environment is concerned: besides great savings are afforded by the size of the machine (adequate to digital technology) and largely inferior to the traditional printing machines.



OTHER COMPARATIVE ADVANTAGES OF DTP

But, surely, those above are not the only positive aspect of DTP: digital is a way to overcome the limitations of traditional printing for number of colors, shade gradations and 3D effects and length of rapport. WE can affirm that in the fashion world requiring more and more flexibility and shorter delivery times design's conception is more and more thinking digital.

Up to now we still cannot say if the digital revolution will lead to the end of flat screen printer: but surely the potential utilizers cannot bypass what DTP means in terms of direct big savings (no engraving, no stocks of cylinders, no color kitchen) and more profit (sampling cost is like producing cost and sampling offer increases dramatically).

Let's also consider the less investment required in case of installation of a digital printing process: we have already seen that the working area is much smaller than the one required by a traditional printing because of the size of the machines; and when we consider the machine their price is affordable if compared to successive savings and in particular to the less consumptions.

And, last but not least, in this scenery, we have to stress once again the already recalled environmental sustainability characteristics of DTP:

- **Low energy consumption (electricity and water)**
- **Low environmental impact**
- **Easy washing off**
- **Friendly chemistry**

MS RESEARCH AND RESULTS

Obviously we cannot conclude but highlighting the great results obtained by MS research in these latest years.
In the times the productivity has been largely growing: MS machinery performances, according to the different machines, pass from up to 100 meter per hour (medium run) of MS JP 5 EVO to up to 210 meter per hour (medium run) in case of a MS JP6 and also 335 meter per hour (medium run) for a JP7.
Higher performances can be obtained by JPK EVO: up to 10,5 meter per minute (long run) and even higher with LaRIO that is up to 75 meter per minute (we can talk of mass production).
According to the printing heads mounted on board, obviously performances and productivity ranges are very different and able to answer the different request of the end user.
So we can say that a JP5 EVO with 4 heads mounted on board offers the productivity with 8 colors to 50 linear meter per hour at a performance level of sampling - short run. If we pass to JP6 with up to 8 heads productivity with 8 colors can be estimated to 100/140 lin meter per hour (short run) whilst we reach 170/230 lin meter per hour in case of a JP7 mounting up to 16 heads (medium run).
MS research is going on and its new frontiers forecast, for example, a JPK EVO mounting up to 32 heads with a long run performance level and reaching the productivity of 5.5/7.5 linear meter per minute or also, the top (for the moment) productivity of 25/45 linear meter per minute (mass production) with an unlimited number of heads.

To summarize all the aspects of digital printing and traditional printing:

Description	Digital printing	Traditional screen printing
N. of colors per design	Unlimited	Limited to screens/cylinders
Max dimensions of design	Unlimited	Limited repeat
Resolution of design	600 dpi and over	150 dpi
Defects and selvedge banding	Not existing	Sometime difficult to erase
Ecology impact/sustainability	Near to zero	Very high due to the waste for the washing of screen and excess of color printed
Minimum quantities	From 1 to any number of meters printed the cost per meter will be the same	Very high cost per meter depending on the number of screens engraved
Dead times setting for changing designs or colorways	Near to zero	Very high depending on the number of screens to be mounted and washed
Times for sampling	Real time	Up to weeks
Cost for a collection of designs	Very low	Very high
Area dedicated to screen stocks	Zero	Up to thousands of sq meters
Operators training	Very easy and quick	Very long and difficult
S.P.R. (Same Print Result)	Very high	To be checked from time to time

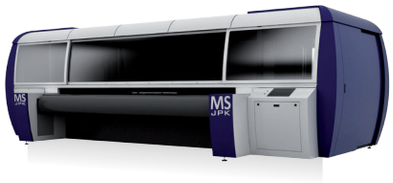
MS JP4

MS JP5^{evo}

MS JP6

MS JP7

Replacement of Table Print



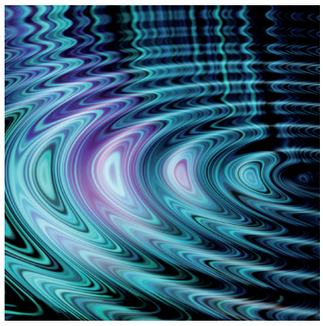
MS JPK^{evo}

Replacement of Flat-bed Print

MS LaRio

Replacement of Rotary Print

MS PLUS: S.P.R.



We conclude recalling a very important concept which distinguishes the MS product range from its competitors that is S.P.R. (Same Print Result). With MS it's possible to start with an entry level device such as JP5 EVO and with the expansion of business it's possible to build the new work on LaRio whilst maintaining the same print quality throughout. MS offers the same print result on any machine from small to large, guaranteeing consistency of print quality throughout the whole range.
S.P.R. allows the customer to select any level of the product range and achieve the same print result, by using the same ink and software.

progetto grafico • www.thinksrl.it

EDIZIONE FEBBRAIO 2014

MS
PRINTING SOLUTIONS

MS PRINTING SOLUTIONS SRL
Via Bergamo 1910, 21042 Caronno Pertusella, (VA) Italy
T +39 02 964 51746 / 02 965 0169 Fax +39 02 965 6218
info@msitaly.com - www.msitaly.com

a DOVER Company