

OPTIMISATION OF NEWSPAPER IMAGING SYSTEMS

Bryan H Sunderland

ABSTRACT

Changes to production patterns in both regional and national newspapers have provided the opportunity for significant improvements in quality with associated commercial benefits. These benefits are achieved when a co-ordinated imaging structure is employed.

The design and implementation of such an approach is considered with a discussion of the implications for quality management.

The core of the system is to consider the complete imaging cycle from design to print. The establishment and the maintenance of the system is handled with a quality assurance programme.

The principles described are being applied to colour and monochrome production.

Pira
Printing & Information Technology Division
Leatherhead, England

INTRODUCTION

Daily newspaper production patterns have changed radically in recent years.

The methods of printing range from traditional letterpress through polymer plate printing to lithography and flexography with significant investments in many areas of the world.

A major change, still taking place, is the location of production functions on different sites and the consequent need for effective links between them.

This decentralisation has been made possible by the application of alternative technologies. These technologies and their associated materials have individual characteristics and these influence the imaging capability of a given system.

The impetus for change is also influenced by market factors such as

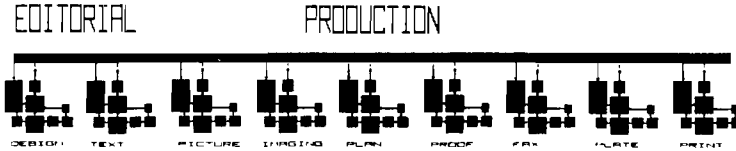
- competition from television
- the requirements of advertisers
- the need for increasing efficiency.

The aim of this overview view is therefore

1. To examine the structure of newspaper imaging processes.
2. To consider the means of co-ordinating the imaging elements
3. To suggest a mechanism to assist the implementation of quality imaging.

THE STRUCTURE OF PRODUCTION

The production flow of a newspaper typically follows the sequence below

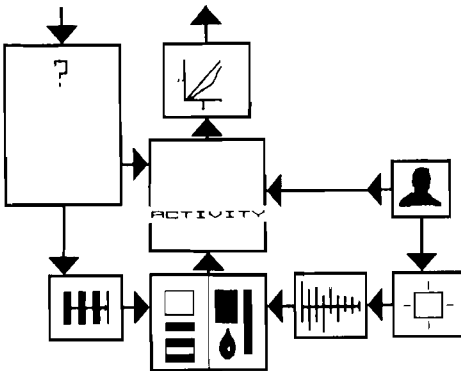


Traditionally there has been a separation between editorial and production in a structural if not necessarily physical sense. The dividing line between these two areas will diffuse as technology provides more features.

The production sequence may be considered as a number of discrete operations. Each has a number of common elements.

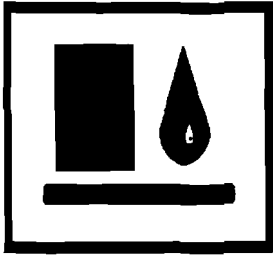
The activity or function

This may be prescribed by either the supplier or the user. For example Design is controlled by the user and platemaking defined by the supplier.

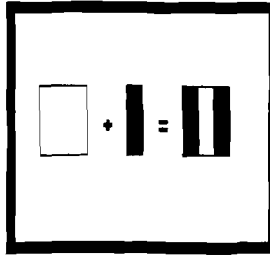


Methods and materials

These are selected or defined for the operation



Materials



Methods

The Operator

This person carries out the operation with the methods and the materials. They often influence performance if they are not correctly employed in the activity.



Operator

Image Quality

These are the attributes of the image which are accepted by the operator. They may or may not be defined or specified.

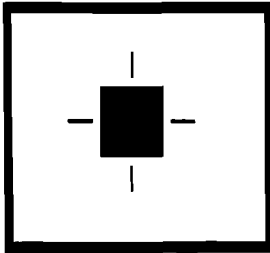
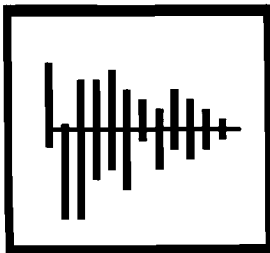


Image Quality

Process Control

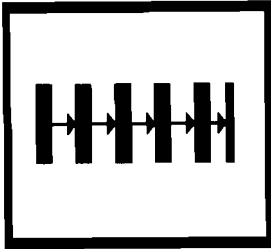
This describes the exercise of monitoring and feedback within the operation but is not necessarily related to the overall product.



Process
Control

Quality Assurance

This contains the standards and the criteria applied to the operation and includes the relationships between operations.

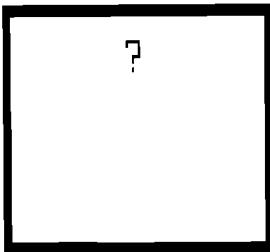


Quality Assurance

Two other elements which are individual to each operation are

The Information

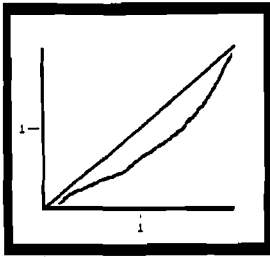
This is provided to the operation from external sources and in the mean for linking the individual activities with the goal of overall image quality from the system.



Information

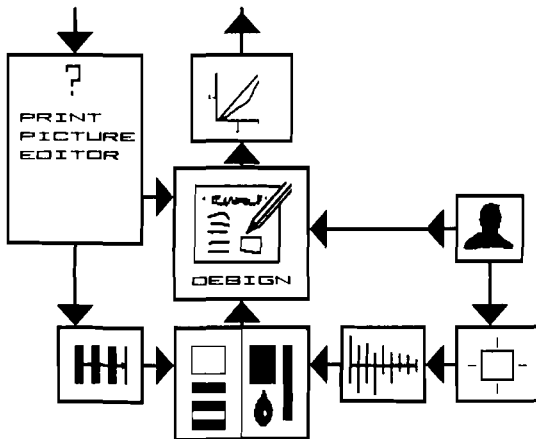
The Final Output or Transfer

It is this characteristic which is the factor which influences the final reproduction and is a combination of the operational elements.



Transfer

The relationship of elements in an operation is shown below. Each operation represents a stage in the cycle but the information provided and applied has an influence on the transfer and thus the relationship of the operations.



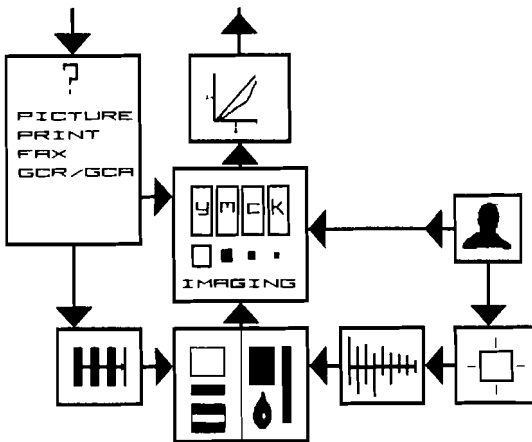
It will readily be appreciated that whether

- the information is applied
- the information is not applied
- the information is incorrectly applied

changes in an operation can have significant effects on the whole production cycle

As an example, if we examine an operation such as imaging, it can be seen that information is required from a number of sources. It is essential that this information is used, not just received, if effective production is to be achieved (ref 1).

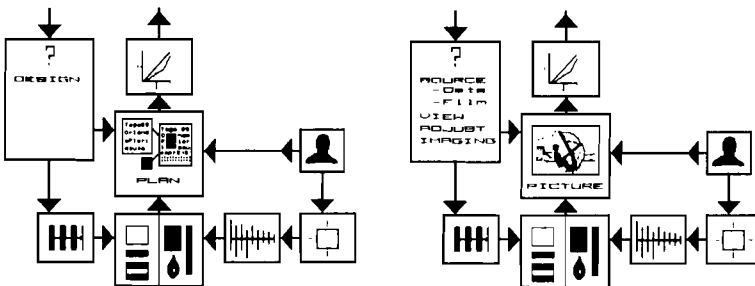
The Imaging Operation

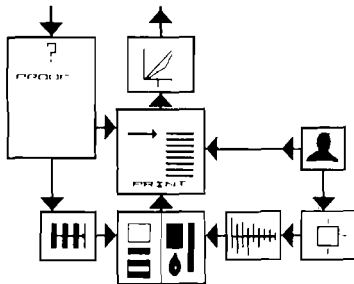
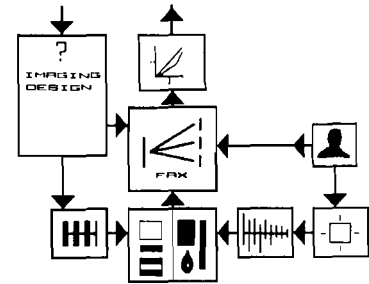
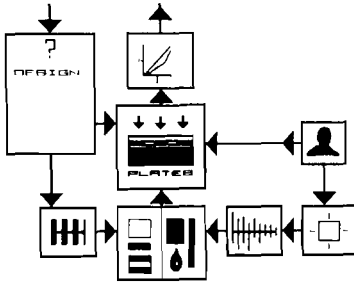
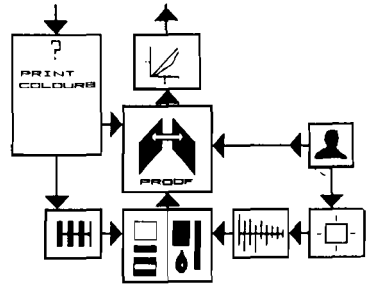
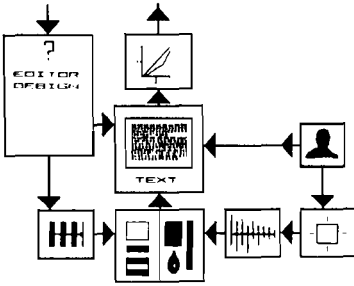


In this example, printing may be produced to specification. If an original for reproduction is not correctly assessed and imaged it will not provide the effect that the designer intended. This is particularly true of newspaper reproduction where the dynamic range of printing is limited.

The aim of specifications and recommendations is to establish the mechanical stages of production while quality assurance provides the links between the stages. Thus process control should maintain quality assurance requirements.

The information elements of some operations in the production cycle are shown below. These list where information is required from other stages. These are not exhaustive but provide a framework for development. The nature of dependant and independant operations is a feature here. In some cases information is required from a number of locations. On others only one set of information or instructions is required.





It is clear that the link between individual operations and their wider context is Quality Assurance. The means of achieving the most effective system is to implement a Quality Assurance programme (ref 2).

Quality Assurance, here, is the structure or mechanism for ensuring that

- the information, to link operations is available
- the flow of information, in a system, takes place
- the information is recorded for data analysis and reference

The first item is a result of research.

The last is an established method in research.

It is the flow and application of the information and the maintenance of standards which is essential to an efficient production environment. This approach is currently being implemented in a number of sites and provides excellent justification for the method.

I would like to thank the following organisations for their co-operation in the production of this paper.

The Daily Mail - London

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The Institute of Practitioners in Advertising

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