# Utilizing SmartStream Designer in creating personalized files for designing packages with an Egyptian identity

**Prof. Ebrahim Waly**
**Professor, Department of Printing, Publishing and Packaging - Faculty of Applied Arts, Helwan University**
**Prof. Noha Abdallah Abd-Elmohsen**
**Professor, Department of Printing, Publishing and Packaging - Faculty of Applied Arts, Helwan University**
**Researcher. Amira Salman Ahmed**
**Art specialist at the Higher Institute of Applied Arts - 6th of October**
**Amirasalman24@gmail.com**

## 1.Introduction:

Automated workflow systems provide the ability to perform standardization and analysis during the printing stages, to know the weaknesses or problems facing this procedure and thus overcome them to ensure the flow of the printing process. The workflow can be seen as any abstraction or model of the real work that helps the mechanism of developing workers in the organization to reach the full advancement and the required degree in the work.

HP Smart Stream are one of the preprint workflow systems that are used with Indigo printing machines, which is a set of graphic tools that help in finding workflow solutions for print production to meet the needs of the market and provide the applications it needs. It provides a workflow from start to finish. It is an effective and simple tool for variable data printing (VDP) that enables owners of Indigo to increase high value jobs and implement special personalized designs.

One of the most important features of HP smart stream is the mosaic technology, which is a technology that allows creating an infinite number of variable designs from one database and the same pattern and makes them from the same family through scaling (controlling sizes, rotation and position...).

Mosaic technology can be applied by using those systems for indigo machines for digital printing to obtain an infinite number of unique designs from the same design of the original file and have the same identity, which is reflected in the local and global market and has a positive impact on the purchasing power of the product. The research dealt with employing one of the modern digital technologies within HP smart stream and for its most important potential in the field of designing packages with an Arab identity suitable for small industries.

## 2.Problems of the study:

The research problem is the following:

1. The emergence of many problems during the process of printing packaging by traditional methods, due to lack of digital flow.
2. The difficulty of producing containers of various designs for limited quantitative production.
3. The inadequacy of traditional printing methods for variable printing or personalized printing that is suitable for small industries.

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## 3.Objectives of the study:

This research aims to achieve the following:

1. Saving time and effort so that packaging can be produced from the beginning of the design to the finishing stage by digital means.
2. The ability to design and print high quality packaging with different ideas that have an Egyptian identity.

4.Research Methodology:

The study followed a scientific methodology that relied on the following:

**First**: The descriptive approach to explain the steps of working with HP Mosaic technology.

**Second**: The experimental approach to creating graphic units with an Arab identity that can be loaded into smart design channels and applying this to Egyptian packaging.

## 5.Digital Workflow:

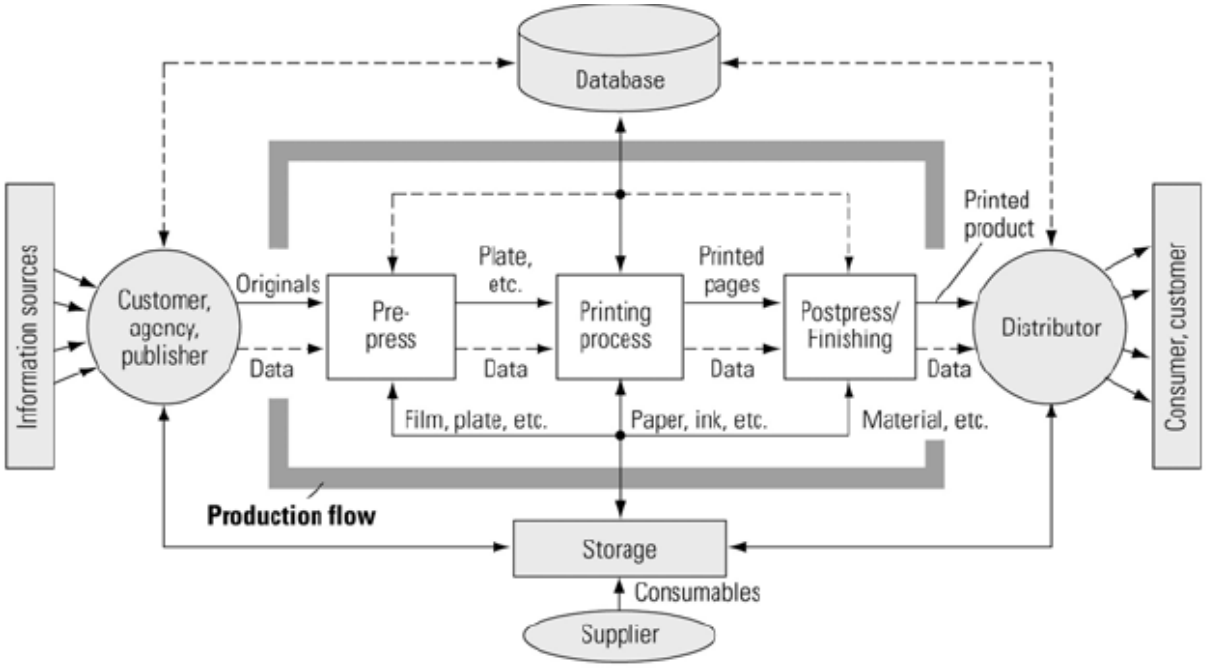
There are more solutions to control production processes, one of these is the workflow.
The workflow is a sequence of tasks assembled to accomplish a certain objective.
Production processes implemented through a workflow need the
support of the information system to ensure that the instruction or message is being delivered to the addressed party immediately.(١)

### 5-1. Advantages of using workflow systems:

- Rapid or automated ignition of repetitive tasks.
- Administrative tasks are partly automated and faster.
- Verification of the job is fast and accurate through visual and textual report.
- Long distances between locations are no problem, connection is easy.
- Distant jobs can be integrated into groups.
- Customers and partners may also trace the flow.
- Standardized communication channels are used.

### 5-2. Production Workflow:

Printing houses as production units have a complex structure, control of the workflow is quite a challenge for experts, even though it can be divided into three areas; Prepress, Press and Post-press for tasks are to be fulfilled in harmony. The achievement of this harmony can be supported by an effective workflow system. Process control in print industry includes the complete control of the production process from the idea through printing to the end-product (Figure 1).(١)




**(Figure 1) Print production process**

## 6.The importance of HP indigo technology in packaging printing:

HP Indigo presses offer unmatched print quality, leading digital productivity, and the ability to capture new business opportunities, by implementing comprehensive end-to-end workflow automation.

Maximum potential of our advanced technology can be achieved.

Workflow automation is the foundation for success in digital labels and packaging, it eliminates the re-entry of job information, thereby reducing error rates and improving productivity. Workflow automation also enables more efficient communication from point of order to fulfillment, as well as real-time job tracking and reporting. Ultimately, workflow automation helps converters become more competitive and profitable [(2)].

## 7.HP Smart Stream Designer:

It is an efficient and simple Variable Data Printing (VDP) tool that enables HP indigo digital printer owners to increase high-value functionality and implement customized designs. [(3)]

## 8.HP Mosaic:

HP Mosaic is a Dynamic Personalization option for HP Smart Stream Designer. The application is a random image generator. It creates unique PDF files based on a template file (txt) and one or more original vector PDF files. The vector PDF files should have square dimensions (equal height and width). The application takes a vector PDF file as input (also known as a Seed file), and then generates a large number of variations on the file by transforming it — scaling, transposition, and rotation — randomly. The output is used as variable image assets in the graphic design of VDP jobs. An HP Mosaic job includes a Seed Set, which is a group of one or more Seed files. The Mosaic image files that are output are created from these Seed files. [(4)]

**8-1. Seed file recommendations:**

**File type**

- Seed files are Vector PDF
- Any application that can produce Vector PDF output, e.g. Adobe Illustrator, can create Seed files.

**File size and weight**

- Seed files must be square (equal height and width)
- Seed file size can be up to 3.0 MB. The smaller the file (in MB), the faster the creation of output file process which is for creating the HP Mosaic variations.
- For multiple use elements, usage of tools such as the Adobe Illustrator Stamp is option to help minimize the file weight.

**Mode**

- The color mode should be CMYK (not RGB) and can include Spot Colors if required.
- Use vibrant, contrasting colors.
- To enable scaling up while preserving the Seed file design, use small design elements and thin elements.
- Use chaotic patterns and "untidy" design, non-linear designs which are not like a checkerboard.

**Optimize Seed file size in MB without reducing graphic complexity**

- Reduce the vector points if using Adobe Illustrator.
- Remove unneeded data if using Adobe Illustrator.
- Save as PDF, and then unchecking Preserve Illustrator Editing Capabilities.
- Manually combine vector elements and diminish the vector points in the document with Adobe Illustrator's.
- The pattern must be vector.
- The Seed file should be saved as Vector PDF. (4)

**8-2. The application on Egyptian identity packages, designed by the researcher:**

**The study prepared one of the original seed file models designed with an Egyptian identity using Islamic motifs to apply using mosaic technology to obtain an infinite number of unique and diverse designs for application on Egyptian packages that have the same identity and are of the same family.**

The first unit Figure (2-a) (the original file was designed by the researcher and she chose color palettes related to Islamic art, such as dark yellow and brown in its degrees, with the addition of dark blue and dark green to indicate originality that can be modified as previously analyzed in the descriptive study).

The application on the packaging precisely from the center point of the original file, and the variable factor is the magnification ratio to obtain more than one design Figure (2-b).

The other choice is random, that is, choosing different areas of the design to be applied to a package

Figure (2-c).

**Figure (2-a) Seed File**

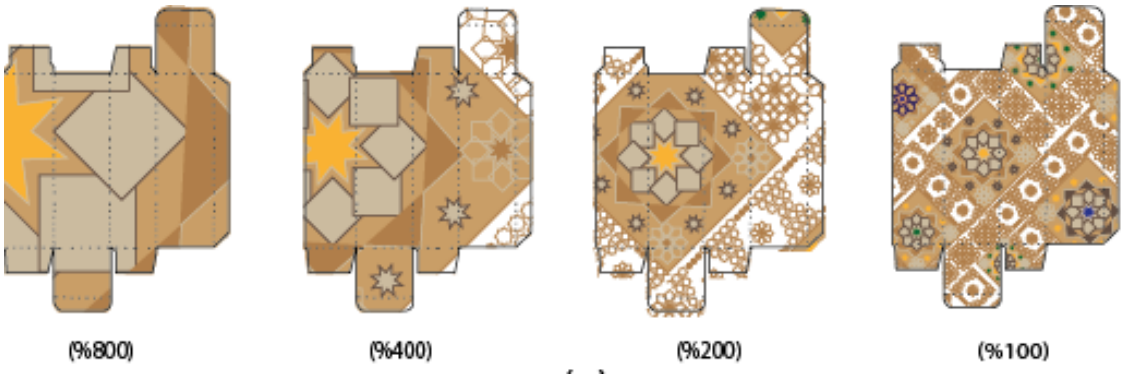



**Figure (2-b) Position: Centered**

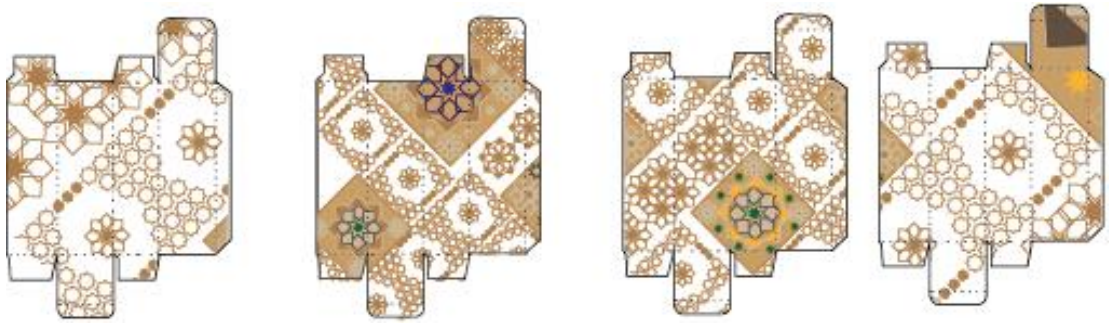


**Figure (2-c) Position: Random**

## 9.Results:

After the study, the student reached the following conclusions:

1. Smart design channels have many advantages, the most important of which is enabling variable or personalized printing.
2. The digital workflow enabled the control of printing processes from the time of the idea to the final product.

3. Mosaic technology is one of the most important technologies that enable a streamlined digital design and the production of a huge number of changing designs.
4. The workflow mechanism for printing production helps in obtaining more competition with the automation of the workflow.
5.The use of mosaic technology contributed to the increase in sales and the priority of purchasing a product with a distinctive design.

## 10.Recommendations:

Based on the findings, the researcher recommends the following:
1. The necessity of using the printing workflow systems within the printing houses.
2. Design units must be prepared as seed files with an Egyptian and Arab identity to raise the value of packaging for small industries.

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