



Integrating Companies in a Sustainable Apprenticeship System

Project 2017-1-DE02-KA202-004174

Intellectual Output 3

Train-the-Trainer Manual

Production planning

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1. Introduction

1.1. Aims of the ICSAS Project

The aims of the Erasmus+ project «Integrating Companies in a Sustainable Apprenticeship System» are to

- induce the existing Vocational Education and Training (VET) systems to train skilled workers for footwear manufacturing in Romania and Portugal to develop towards work-based learning (WBL) and improve the sector-specific tutor training in Spain and Germany
- develop a sector qualification framework and the referencing of national qualifications of Germany, Portugal, Romania, and Spain.

1.2. Eleven Manuals to Guide In-Company Tutors

Within this project, the project consortium has committed to editing eleven manuals which are intended to prepare in-company tutors and provide support for the work-based learning phases of the apprenticeship.

The work-place specific know-how (for example in the cutting department) will be imparted by skilled workers from this department. They will take on the role of in-house workplace instructors/trainers.

- demonstrating the operations which the apprentices are supposed to learn to perform
- guiding and supervising the apprentices during their first approaches as their skills are becoming more and more advanced
- leading them towards an independent performance of the task

Furthermore, each company enrolled in work-based learning will appoint a Head of Training who is responsible for

- planning of the order of the overall training of each apprentice (how long each apprentice will be trained at each learning station and in which order)
- assessing and documenting the learning progress of each student at each learning station

The chapters of this document are not meant to replace a textbook. They are meant to provide support to the trainers to plan the work-based learning activities with the trainees. The workplace trainers are invited to gather more information from other sources.

1.3. Take Your Apprentices on a Guided Tour

Before you start the hands-on training in a specific department, please make sure that the apprentice has been given a tour of the entire company including all departments.

For example, you could start with presenting the types of products your company manufactures and their intended use, the different customer segments, the distribution channels etc. Allow the apprentices insight into the product creation and manufacturing

processes, i.e. product design, pattern making, purchasing department, production planning, and all production departments to warehouse and logistics.

Present some shoe models your company produces (as in Fig. 1). Your trainees will better understand the complexity of the product “shoe.



Fig. 1: Views of shoe parts like on this photo can be very helpful for the trainee to understand the complexity of a shoe

2. Production planning

Footwear production planning is about distributing and coordinating all the activities related to footwear manufacturing.

Production planning activities are mainly divided into the following categories:

[<https://www.123test.com/professions/profession-footwear-production-manager/>]

[<http://accessinfotechindia.com/product-features/>]

- **Product data management** - products classification, size, style, variants, design, target market, materials, components, technical specifications, etc.;
- **Order management**- inventory, manufacturing, and delivery planning according to deadlines and available resources;
- **Manufacturing planning and monitoring**- planning and coordinating all the manufacturing phases and tracking work in progress and consumption.
- **Materials and components planning and inventory management**- ordering materials and components according to work orders and managing bills and keeping inventory.
- **Delivery and finished products stock management**- plan, organise and monitor logistics and supply chain activities.
- **Workforce management** - organising workforce accordingly to availability and keeping daily records of work hours and productivity.
- **Financial Management**- accountancy system that provides accurate and on time information regarding cash flows, fund flows, recurring expenses, costing and efficiency of manufacturing systems, budgeting and fund allocations.

Depending on the company (size, organisation of departments, distribution of activities etc.) part of the activities related to production planning can be included in other departments.

For increase efficiency, companies use for production planning different software systems. The main software categories are ERP (Enterprise Resource Planning) PDM (Product Data Management) and PLM (Product lifecycle Management).

3. Example: Production planning at Papucei

Next, the main features of production planning software used by “Papucei” will be presented. We mention that there are various software solutions available on the market that have similar functionality, therefore we will not make a detailed presentation on how to use this software. We will focus on those modules also found in other programs.

Production planning software main sections:

1. Models
2. Materials
3. Clients
4. Orders
5. Barcodes

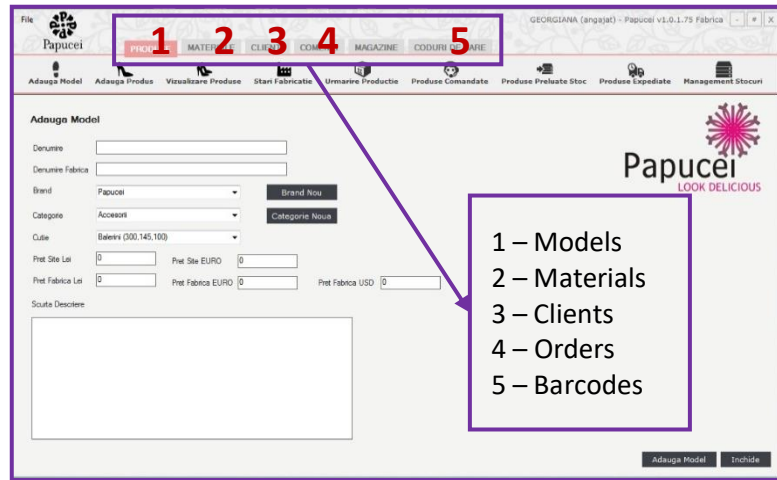


Fig. 2: Production planning software main sections

3.1. Models

a. Define new Model

- name;
- code;
- category/type;
- description;
- variants;
- image.

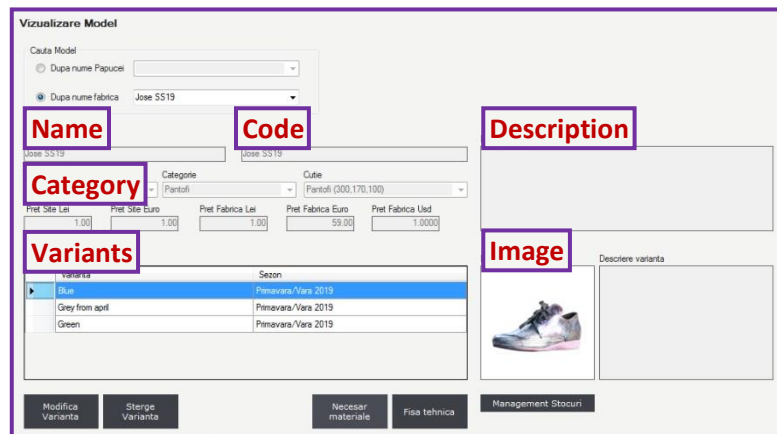


Fig. 3: Defining new model

b. Assign Materials

- assign materials and components (type, name, colour, cod, UM, supplier, quantity etc.);
- in the case of “Papucei”, materials consumption is received from the technical design department.

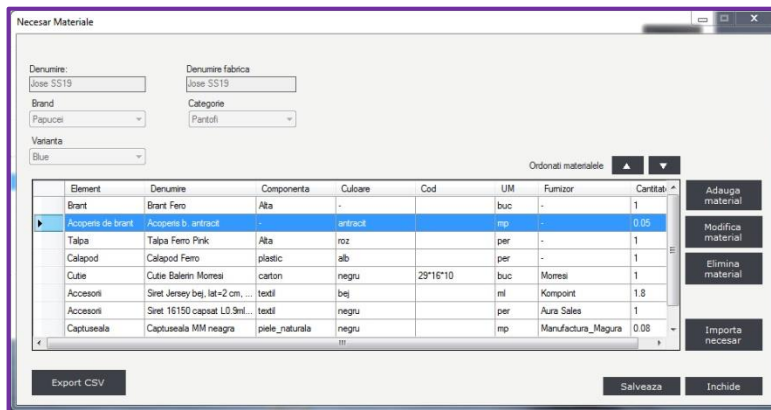


Fig. 4: Assigning model materials

c. Bill of Materials

After filling all the models details and assigning materials, the bill of materials can be generated.

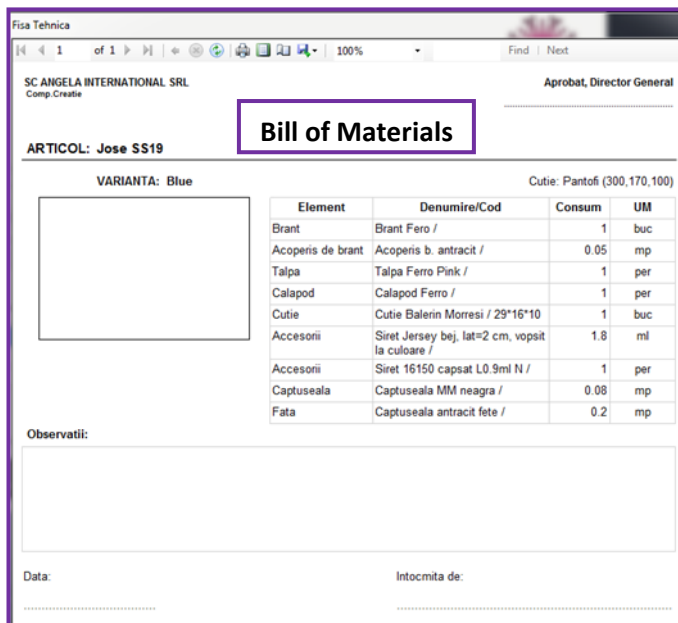


Fig. 5: Model technical sheet

Also, from the **Models** section is possible to access the existing shoe models, track manufacturing process, and to check ordered, stocked and shipped models.

3.2. Materials

- new materials and components can be added to the system or the details of the existing ones can be changed;
- also, materials can be ordered from this menu.

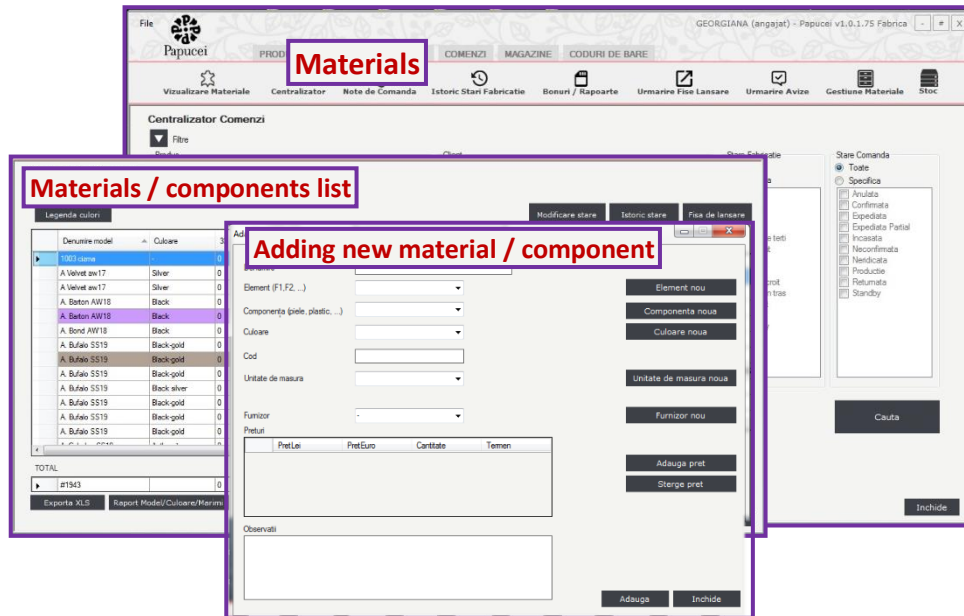


Fig. 6: Materials menu

3.3. Clients

Adding new clients (company name, headquarter address, shipping address, country, telephone, mail, contact person, etc.) and viewing existing ones.

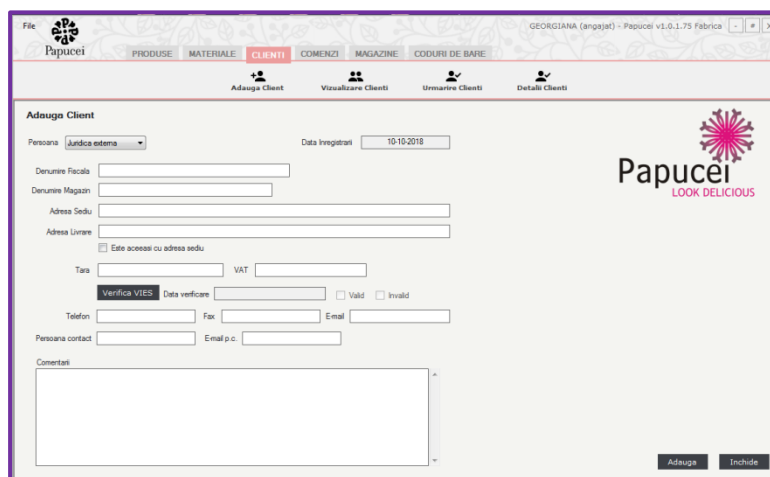


Fig. 7: Clients menu

3.4. Orders

Adding new orders received from clients in to the system and track orders and bills.

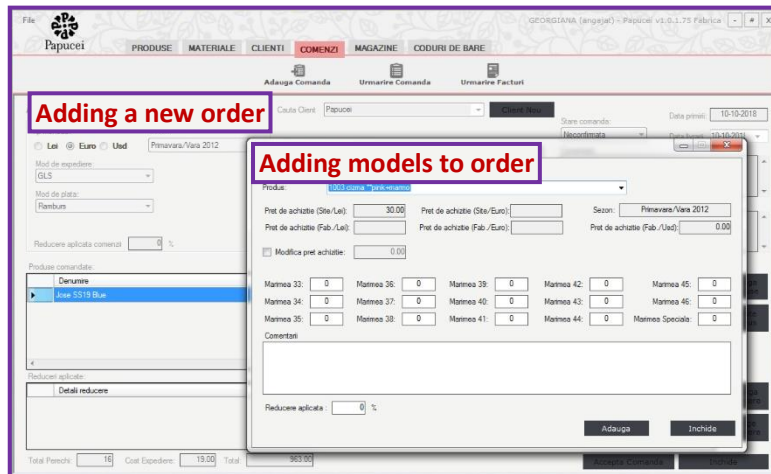


Fig. 8: Adding a new order

3.5. Barcodes

From this menu, for each order, packaging labels can be generated and printed.

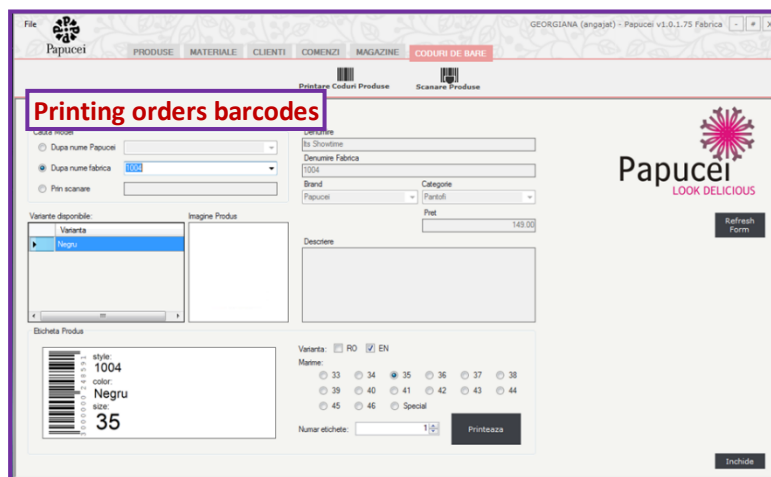


Fig. 9: Printing barcodes



4. Assessment/ Feedback template

4.1. Introduction to feedback sheet

Unlike learning in formal environments as in classrooms or workshops, learning outcomes (LO) from work-based learning (WBL) in a learning station (LS) depend strongly on the actual equipment of the production line and the models and makes, which a shoe factory manufactures. If the shoe models produced do not require certain work tasks of a whole sphere (in stitching or assembly, for example), then it is simply not possible to acquire skills in this production line related to this method.

A systematic and transparent communication on concrete LOs acquired via WBL by a learner/apprentice between tutors, supporting the learner in the various departments, and the head of training, being responsible for the entire training programme, is of great importance in WBL.

With the intend to provide a concise and handy communication tool, we recommend using the matrices as shown below: They allow tracking the achievements of each trainee in each department in a quick and easy way. The matrices do not refer to any formal assessment; they simply state the degree of autonomy each trainee was able to reach within the given timeframe in each Sphere of Activity.

The matrices list the main work tasks (in bold) and the performance that can be acquired in each department. The work tasks refer to the acquired skills; to indicate that they include key competencies and knowledge the underlying elements for some of the work task are listed.

How to use the matrices: In order to give feedback on the learning progress of each trainee, please tick off the level of autonomy the learner has reached for each work task (choosing between needs assistance / needs instruction / needs supervision / completely independent).

If the work task in the matrix was not part of the training, you can leave it out or erase the work task; if additional work tasks were trained, please feel free to continue the list of work tasks according to your training goals.

In the end, the matrices will document what each learner has been able to acquire and which level of autonomy she/he has reached. And again, although this has already been said: Please bear in mind that you may have to adapt the matrices according to the processes and to the operations in your department.

Sphere of Activity: Production planning

Work task: Models

Defining a new model;
 Defining model variants;
 Modifying an existing model;
 Assigning materials and components to a model;
 Asking for support if needed.

Evaluation

Needs assistance	Needs instruction	Needs supervision	Completely independent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Place, Date

Signature

Work task: Materials

Defining a new material / component;
 Defining a new material / component;
 Ordering materials;
 Asking for support if needed.

Evaluation

Needs assistance	Needs instruction	Needs supervision	Completely independent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Place, Date

Signature



Work task:				Clients
Adding a new client; Checking client details, orders, bills etc.; Asking for support if needed.				
Evaluation				
Needs assistance	Needs instruction	Needs supervision	Completely independent	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Place, Date				
Signature				
Work task:				Orders
Adding a new order; Tracking order process; Asking for support if needed.				
Evaluation				
Needs assistance	Needs instruction	Needs supervision	Completely independent	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Place, Date				
Signature				
Final evaluation (in this department)				
Production planning, including all work tasks above				
Evaluation				
Needs further training		Can perform all work tasks (almost) independently		
<input type="checkbox"/>		<input type="checkbox"/>		
Place, Date				
Signature				

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