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IEEE Industry Connections (IEEE-IC) Personalized Digital Last (a Women's Example)—The Tool Required to Enable Mass Customization

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ELSE Corp is an Italian start-up company based in Milan and founded in 2014. Since then, the company has been working on design and development of a technologically technologically-advanced Cloud SaaS API platform on support of business module "Virtual Retail" (or "no-stock retail") for the consumer goods—apparel and footwear industry. The platform E.L.S.E. (Exclusive Luxury Shopping Experience) is aimed at providing an extraordinary new Customer Shopping Experience in 3D (applications, web, mobile apps, Virtual Reality, Augmented and Mixed Reality environments), and support in its core the services of Mass Product Customization and cloud based Hybrid Manufacturing, by integrating all their components and processes into brands' and retailers' e-Commerce, CRM, ERP, and PLM systems.

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Abstract

This white paper examines the development of a personalized digital last and the impact on the role of footwear technicians. As the personalized digital last becomes the basis of future footwear production, the role of footwear technicians may expand to include a broader definition of fit, maintaining libraries of different lasts, and maintaining quality safeguards for mass customized of footwear. Though this paper focuses on women's footwear, the issue of fit is universal for men, women, and children. The techniques described in this paper, can be utilized for most footwear segments.

1. Introduction

For more than 100 years, shoemakers have worked to provide women stylish shoes, with the premise that average foot parameters could be adequately accommodated with sized lasts regardless of foot size or shape. The well-honed shoe last is a core part of a brand's design and an integral part of the individual brand's success. However, the current purchasing experience for the customer feels equivalent to a "wild goose chase"—an expression meaning "a foolish and hopeless pursuit of something unattainable." The customer may find the stylish shoe that she would like to purchase but is then forced to make a compromise between her individual foot requirements and the shapes provided by the shoe brand. The model of "sell what you've created," based on standard sizes (and standard styles) should become "design what can be sold." The concept of customized footwear, however, is a century-long discussion. In 1902, Gooding was recorded as saying "Every woman has not a size 4B (UK) fitting foot, yet every woman is entitled to the same shoe appearance regardless of the size of her feet." (Golding [5]).[1]

The time is ripe for the footwear industry to provide customers with what they really need—stylish shoes that fit and serve the intended function. Driven by the traditional fashion calendar, the industry places high-volume orders well in advance with supply too often exceeding actual demand. This results in markdowns, which many shoppers expect and anticipate, leading them to over-consume. For those customers who are outside of the size range that the brands purchased from the manufacturers, the choice becomes "none-at-all" and purchases are not made. In the context of mass customization, brands may offer too many choices that do not

[1] Information on citations can be found in Section 6.

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