



Andalusia Design

DIGITAL FABRICATION: FROM DESIGN TO PRODUCTION, THE MODERN MODEL FOR VERTICAL INTEGRATION

Over the past decade, advancements in software technologies have given architects and product manufacturers the ability to dramatically improve design and fabrication processes via the elimination of non-value-added activities. In order to realize these gains, however, manufacturers need to embed these new software tools seamlessly within a vertically-integrated operating model to best service their architect clientele.

Creating unique architectural elements can involve many manual steps throughout the design process – from sketches through production – and often across different companies. These activities are costly, time-consuming and quality-compromising, thus necessitating multiple checks and balances.

Several factors have changed that gives merit to re-visiting how an architectural product business operates. 3D modeling software and advanced production equipment offer a more efficient process, allowing an immediate transition from design to production under a unified business model. This integrated approach hasn't been the norm due to the need to overhaul established business processes, but it offers numerous benefits:

CUSTOMIZATION: It will become easier than ever to customize space solutions. A slight tweak in the digital model, and the production line can dynamically create a unique item tailored to specific requirements.

REDUCED ERRORS: As the entire process is automated, the possibility of human error during translation from design to fabrication is minimal.

SPEED: Time-intensive steps, like generating BOMs and work orders, are eliminated, thus streamlining the production process.

FLEXIBILITY: Design tweaks can be made in real-time and updated instantly in production, allowing for fast iterations and agile product development.

INTEGRATED PROTOTYPING: Testing a prototype before full-scale production is more straightforward. Designers can create a model, print a prototype, test it and adjust the design – all in a short period.

The shift from manual delineation of every stage of architectural product development to an integrated, digital approach has massive implications. It promises not only to improve efficiency and reduce costs, but also ushers in an era where product design is no longer limited by process – only by creativity.