PLM research

eBusiness for the Midsize Enterprise

CASE STUDY

THE ACCESSORIES MARKET

In the world of furniture accessories - wall décor, mirrors, lighting, tabletop art, etc. - new product is the lifeblood of a company's existence. "Our retailers need fresh and new accessories to keep their stores and associated furniture interesting", explains Mac Cooper, President of The Uttermost Company - an industry leader in wall décor and portable lighting. "However, if it takes nine months to deliver those designs to market, much of the opportunity is lost due to the accessory market's increasingly shorter product lifecycles".

THE CHALLENGE

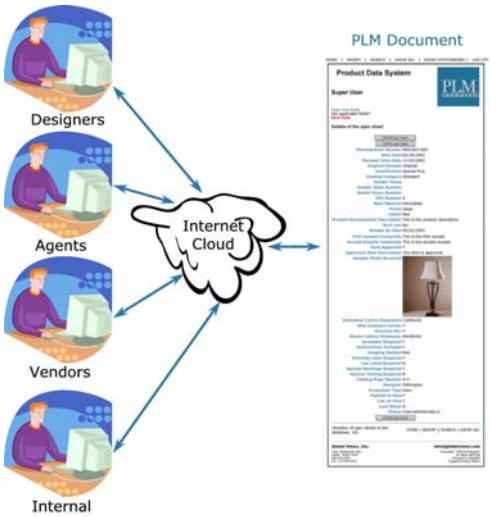
Furthermore, many in the furniture/accessories world rely upon an outsourced manufacturing model - often on a global basis - to provide more value and product diversity to their consumers, adding yet another layer of complexity to their efforts. And therein lies the rub: How do midsize manufacturers maintain their creative edge, leverage a globally distributed value chain[i] *and still* deliver often hundreds of new SKU's promptly to market?

DELIVERING CREATIVITY

Product development typically involves a number of designers, suppliers, manufacturers and internal personnel all engaged in a cycle of iterative sketches, reviews, samples and revisions until the design(s) are "just right". But let's face it; getting the design right is only part of the challenge. When the dust settles, when the design reviews are complete, and the sample is "tossed over the wall" into production, all of the "qualitative" design vocabulary needs to be translated into a set of "quantitative" product attributes - various dimensions, CAD drawings, photographs, vendor numbers, etc. - in order for production plans [read delivery] to be met. This latter effort, which falls under the heading of Product Lifecycle Management (PLM), is becoming increasingly *more* important to the Accessories Industry as product lifecycles shrink in the face of global competition. Bluntly stated, the speed in which an organization can bring new products to market (accelerated time-to-market) is becoming *THE* competitive metric in the new millennium.

"We realized that Uttermost needed a cost-effective, real-time alternative that would link our partners together across time zone and business cultures".

- Mac Cooper
President of The Uttermost Company



PLM DEFINED

At its heart, PLM is based upon document control throughout the product's *entire* life as a means of accelerating time-to-market.

When Product Design was conducted in-house at one or two geographic locations sharing product information [read collaboration] was relatively simple. Today, product conception, design reviews, sourcing, launch strategy and manufacturing rarely occur in the same location… or time zone… or country. Global competition, favorable overseas manufacturing opportunities, and the overwhelming success of outsourcing as a business model have stretched Design across borders, cultures and value chain partners.

PLM promotes value chain collaboration by providing a centralized document repository – "the same sheet music" – from which design information can be shared. Commissioned designers can upload sketches, CAD and concepts; Agents can respond with prototype images, dimensions and weights; Vendors can offer component suggestions and design alternatives; Internal personnel can review material lists to ensure long lead time items are in process; Logistics can assign customs numbers; Quality Assurance can ensure labeling, hazardous materials, and assembly instruction are uploaded and attached to the design. Design comments and price negotiations can be recorded to ensure "a paper trail of

accountability" follow the product from conception through to delivery. In short, the velocity of information between design stakeholders increases, resulting in accelerated time-to-market.

AD HOC DATA MANAGEMENT

While the Fortune 500 can afford the PLM systems necessary to achieve accelerated time-to-market, small and midsize enterprises (SME), regrettably, have had to rely upon ad hoc systems and procedures to harness their information flows. Typically, these systems are nothing more than a flurry of email, faxed correspondence and phone calls attempting to tabulate data - either in paper form or within an Excel ® spreadsheet - in preparation for production. Unfortunately, these ad hoc systems usually run into three BIG problems:

- Inadequate visibility - up-to-date development status is extremely difficult to determine;
- Poor synchronization - it's difficult to keep all "stakeholders" informed when changes occur;
- Lack of collaboration - sharing information on a real time basis is impossible.

Although ad hoc data management systems are flawed in their execution, their motivation and intent are *still* well founded in an organization's attempt to accelerate time-to-market. It therefore behooves the SME to recognize these shortcomings and address them as quickly and efficiently as is possible. To do so they must understand the phases of a product's lifecycle, the general data requirements of the stakeholders during the Development phase, and the limitations an organization's current "legacy" information technology (IT) systems have in managing these.

PLM allows us to focus upon the product design rather than product administration".

- David Gebhart
President of Global Views

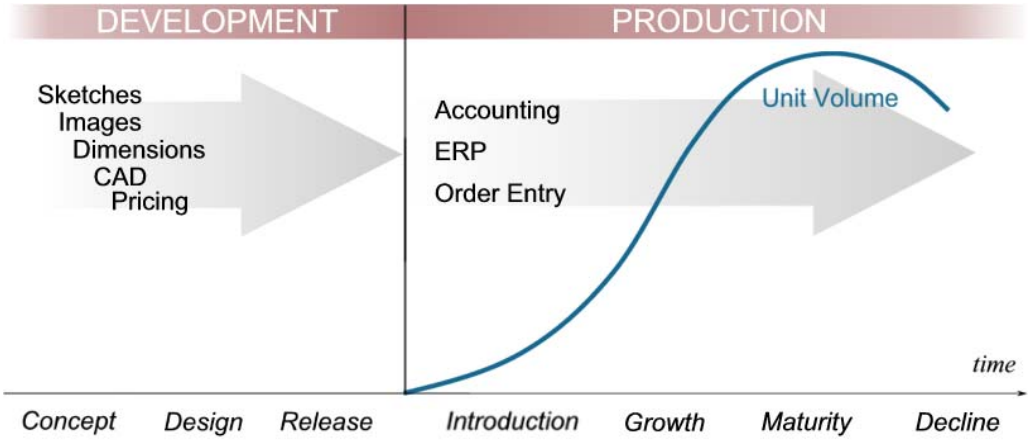
LEGACY IT SYSTEMS

Nearly every company has some sort of Enterprise Resource Planning (ERP) system that codifies and coordinates Production. Unfortunately, Development with its iterative, trial-and-error methodology does not follow the linear path of ERP and production. As such, Development has had to rely upon information collected at the department level incumbent to their functional roles - Marketing manages price, promotion, and distribution information; Design manages color, size, shape attributes; Finance manages standard costs, and so on.

The flaw in these ad hoc systems usually surfaces during the run up to Market or a catalog shoot", states David Gebhart, President of Global Views, Inc. – a leader in decorative home accessories, "when all the iterations of product information – dimensions, photos, samples, delivery status – need to be compiled and coordinated in one place by deadline". Because ad hoc systems lack inter-departmental visibility and synchronization, the outcome usually results in a last minute frenetic attempt to "collaborate-or-die".

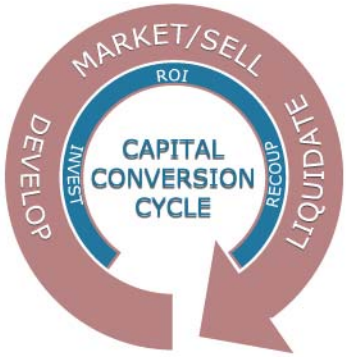
DISSECTING PRODUCT LIFECYCLES

Operations has traditionally characterized product lifecycles in terms of their production life - Introduction, Growth, Maturity and Decline. It is this "production" framework that has fostered and defined the ERP software that harnesses an organization's internal human, financial and manufacturing assets.



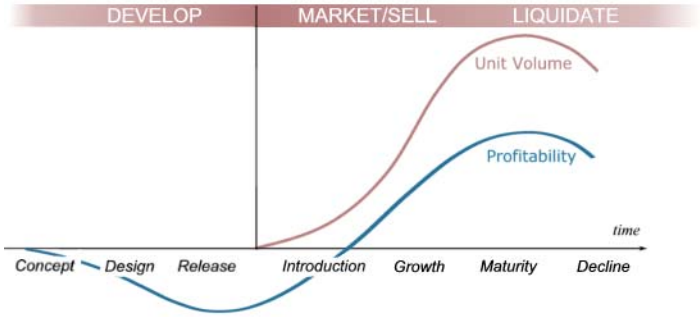
Management, on the other hand, characterizes product lifecycles in a more encompassing way: working capital conversion cycle. Over the life of the product, working capital is invested in new designs in hopes of a Return on Investment (ROI)

during the subsequent production phases. Toward the end of the product's life, excess raw material and finished goods need to be liquidated to free up capital for the next iteration of product lifecycles.



According to consulting firm Pittiglio Rabin Todd & McGrath approximately 80% of a product's cost structure is determined during the development phase of its lifecycle. Paradoxically, this is one area that management has had little visibility and control. Distributing design stakeholders around the globe exacerbates an already challenging situation.

Why is Development so difficult to manage? Unlike production information that concerns itself with internally generated accounting, planning, and procurement information, development information often originates outside the walls of the enterprise. CAD drawings, samples, images and sketches emanate from a cadre of outsourced design, manufacturing, sourcing and logistics services. These "external" stakeholders participate heavily during Development, and therefore, the exchange of development information becomes intense. Unfortunately, such interaction has historically flown under the radar scan of enterprises control systems: "That which cannot be measured, cannot be managed".



PRODUCT LIFECYCLE

DATA ATTRIBUTES OF PRODUCT DEVELOPMENT

Contrary to the ERP driven Production environments, Development has fundamentally different information requirements:

- Data Vaulting - Facilitating the storage and disposition of design data;
- Workflow Control - Managing and overseeing the design/review/approval process;
- Versioning - Codifying design iterations and providing "role-back" to prior designs;
- Venue - a secure area where designs can be shared simultaneously, often in real time.

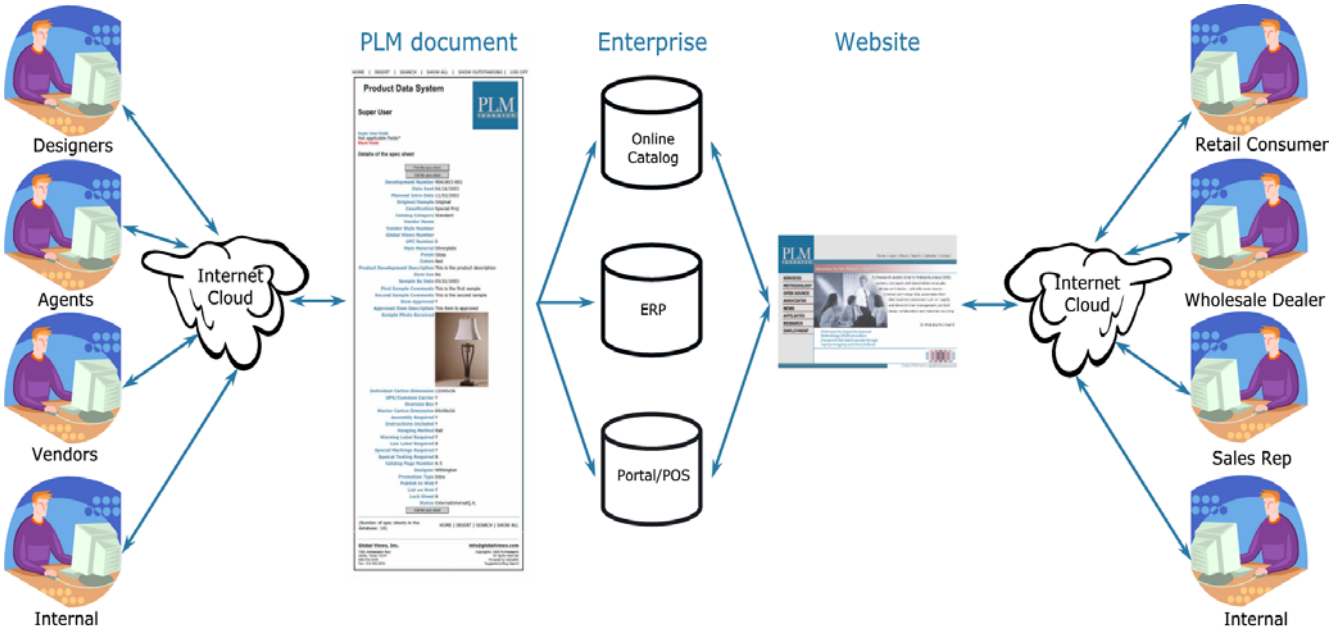
The sophistication and cost of PLM systems that track/store this kind of information is directly proportional to the product's level of engineering complexity. Highly engineered products (electronics, aviation) rely heavily upon all four information aspects and can cost several hundreds of thousands of dollars. Products of lower engineering complexity (such as accessories) cost substantially less.

ENTER THE INTERNET

The ubiquity and low cost of the World Wide Web has [finally] brought the concepts of PLM into the realm of the small and midsize enterprises. While in the past, data networks consisted of expensive leased line communication, today's Internet offers global communication for as little as the cost of an AOL account. Yesterday's expensive computing hardware has given way to low cost personal computers. Proprietary communication protocols have fallen to IP protocols secured by Virtual Private Networking (VPN) and encrypted transmission (SLL). In short, the Internet offers all the ingredients necessary for PLM.

PLM - THE WHOLE ENCHILADA

Obviously, the benefits to Development within the Accessories Industry are clear, however, that's just the beginning. As stated earlier the basis of PLM is founded upon document control throughout the *entire* product lifecycle. The holistic view that PLM provides, allows the enterprise to leverage product data forward into Production and other sell-side applications. Unbeknownst to the Designers, Agents, Marketing, QA and Logistic stakeholders who fervently enter and maintain product design data is the resulting catalog of SKUs, images, item and UPC numbers… replete with *accurate, up-to-date* attributes that can be syndicated out to ERP item masters, on-line catalogs/websites, showroom floors Point of Sale (POS) and Customer Service portals. In fact, PLM can even coordinate liquidation via traditional and web based outlets.



CONCLUSION

Combined with the ubiquity and low cost of the Internet, PLM concepts – once available to only the elite few – are now permeating down into the value chains of traditional industries. The accessories industry, which has characteristically lagged in the deployment of technology, is ripe for PLM. Overseas manufacturing coupled with increasing short product lifecycles and prolific product introduction places tremendous strain on the accessories manufacturer as they struggle to maintain their competitive stance within an evolving industry.

With its holistic view, PLM now becomes *the* repository for ALL product data which in turn can be syndicated out to other mission critical applications such as ERP, showroom POS, websites and portals. In short, PLM keeps everyone within the value chain – from concept to consumer - singing from the same sheet music.

If you have questions or comments concerning this document please contact us at 1-800-310-3992 or info@PLMresearch.com. See us on the web at http://www.PLMresearch.com

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[i] The idea of the value chain is based on the process view of organizations, the idea of seeing a manufacturing (or service) organization as a system, made up of subsystems or external suppliers. See Porter, Michael E., "Competitive Advantage". 1985, Ch. 1, pp 11-15. The Free Press. New York.