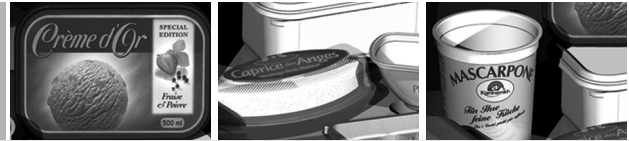


Optimizing the management and delivery of the brand to the marketplace

www.siemens.com/plm

white paper



- ▶ Illustrating the power of product lifecycle management (PLM) solutions in the consumer products industry.

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Innovation in the consumer products industry is a necessity for survival. Where cost containment and increasing operational efficiencies were once the staple diet for improving profitability, consumer product companies are looking to address top-line growth challenges by focusing on innovation to deliver the right products to market that consumers are excited to buy.

With consumers now demanding more choice and convenience mass market “one size fits all” products have been replaced by a proliferation of brand variants and sku’s targeting the consumer’s specific needs and desires. Increasingly this innovation effort is being focused on the product’s packaging and artwork.

Leaders in the Food and Beverage, Tobacco, Household and Personal Care, Cosmetics, Healthcare and Retail sectors have invested in product lifecycle management (PLM) solutions to accelerate innovation whilst reducing product related costs and the risk from non-compliance. The Aberdeen group in their ‘The CPG Innovation Agenda’ report confirms that, “Best in class innovative companies are four times more likely to have PLM-related technologies than their poorer performing competitors.” These early adopters report to seeing significant success in the following areas:

- *New product development and introduction*
- *Global specification management*
- *Packaging and artwork*
- *Idea management*
- *Product portfolio management*
- *Regulatory compliance*
- *Supplier relationship management*
- *Cost avoidance*

This paper examines the benefits of PLM, and in particular Teamcenter® software solution, to the consumer products industry, using the packaging and artwork process as an illustrative example. The paper identifies the issues and challenges surrounding packaging and artwork, and how Siemens PLM Software’s thought leadership and solutions facilitate companies across Food and Beverage, Tobacco, Household and Personal Care, Cosmetics, Healthcare and Retail to repeatably deliver great design creativity faster and more cost effectively to market, whilst ensuring the information on the packaging is accurate and satisfies regulatory and local market requirements.

By directly addressing the issues and challenges inherent in the packaging and artwork process from design through to printing, PLM will deliver benefits in terms of faster time-to-market, reduced costs and ensured compliance, typical results include:

- *Reduced time-to-market by up to 50 percent by getting the artwork right first time*
- *Achieving launch dates, not being late to market*
- *Siemens customers report 2 to 3 times productivity improvements, enabling greater throughput with same resources*
- *5 to 10 percent incremental savings due to convergence between product development and procurement*
- *An estimated 5 percent reduction in costs through increased re-use of packaging components and brand assets*
- *Lower service costs associated with reprographic companies and printers. By removing the over reliance on service partners, companies are in a stronger position to negotiate service contracts.*
- *Elimination of packaging related product recalls, ensuring no lost sales revenues due to recalls and withdrawals*
- *Ability to demonstrate compliance to governmental and local market legislation*

Fundamental to achieving these benefits is making the packaging and artwork design process more efficient. Siemens believes that this can best be achieved by consumer products companies partnering with a solution provider who has a full appreciation of the varying supply chain engagement models that a consumer product company may adopt to support their packaging and artwork activities, and the roles and responsibilities of the various process stakeholders including designers, artwork houses, reprographic companies and printers.

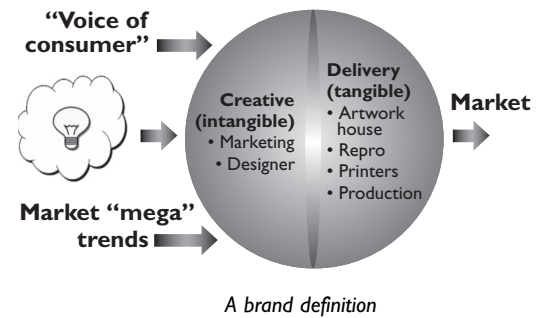
Effectively, there are two sides to the brand implementation process, illustrated in the figure on the right. The creative, marketing led aspect and the delivery aspect concerned with the production of the actual printed packaging. The root cause of the design iterations, rework and late stage changes prominent in today's packaging and artwork processes is disconnect between the creative and delivery aspects.

Based around a secure central repository of all packaging and artwork information, the Teamcenter solution brings the two aspects of the process together ensuring that all stakeholders, irrespective of the engagement model being followed, have access to the right information at the right time in order to execute efficiently and effectively.

An example of the power of the Teamcenter solution is its ability to relate the different types of packaging and artwork information, creating master profile templates that link together cutter profiles, brand assets, legal elements and related technical specification information, including printing and packing line criteria and any other packaging technical criteria, into a re-usable hierarchy. This approach can significantly speed up and reduce the cost of the packaging implementation process.

The value to a consumer products company in applying Teamcenter PLM technology to their packaging and artwork process can be summarized as follows:

- **Total control of brand assets** – reduces costs and promotes brand consistency through greater re-use, rationalization of packaging components and the increased ability to manage increased product/packaging complexity. Additionally, as Teamcenter's central repository holds all artwork electronically it provides a future proof platform, enabling a company, when ready, to move from the traditional two stage artwork file/repro file process to a single production file in order to realize significant time-to-market and cost reduction benefits. Teamcenter enables a company to develop and implement a strategy to deliver the brand digitally across all media
- **Total control of the process** – providing greater visibility and control of the process to ensure packaging is delivered on time and in budget. In this environment stakeholders can contribute to the process proactively not reactively, therefore facilitating creativity not restricting it
- **Total supply chain independence** – gives supply chain flexibility to a company, enabling them to work with whichever printer, reprographics company etc is most appropriate. This becomes increasingly important as companies look to sell across global markets. By controlling the brand assets and the process, a consumer products company has control and avoids becoming over reliant on any one specific supplier and can therefore establish a stronger position to negotiate service contracts



All products sold, irrespective of whether they are from the Food and Beverage, Tobacco, Household and Personal Care, Cosmetics, Healthcare or Retail sectors have some element of product packaging. It is often said that a product's packaging provides the "first moment of truth" to engage with the consumer at the retail shelf.

With consumers now demanding more choice and convenience mass market "one size fits all" products have been replaced by a proliferation of brand variants and sku's targeting the consumer's specific needs and desires. It is now a fundamental capability for a company to be able to innovate and successfully launch new products and refresh existing ones at a faster rate in order to meet ever narrowing demand windows and strengthen consumer loyalty. Increasingly this innovation taking the form of the product's packaging and artwork to deliver the variety and convenience required.

Yet there is more to packaging and artwork than aesthetics at the end of the production line, as Kevin O'Marah, AMR Research, emphasizes, "Getting brand graphics and label details right is just as much of a bottleneck as getting formulas and recipes straight." Recognizing its relative importance, companies often address Packaging and Artwork as the first phase of their PLM vision. As Kevin O'Marah, AMR Research, confirms "Few business processes in CPG are better suited to the use of PLM technology for savings and competitive advantage than packaging."

The following are characteristics of packaging and artwork that illustrate why the process is so suited to the application of PLM technology.

- **Innovation is key** – Being innovative and incorporating the "voice of the consumer" is essential to delivering creative product packaging which meets the needs of the consumer e.g. convenience packaging
- **Time critical** – Development of packaging and artwork has always been on the critical path of a product launch, with late packaging often cited as the reason for a product being late to market
- **Outsourced environment** – The development of packaging and artwork involves working and collaborating with outsourced suppliers and partners including designers, artwork houses, reprographic companies and printers
- **Fragmented sources of Information** – Large amounts of information, often residing in different places across the enterprise, are required to be managed throughout the process. Including graphic artwork, ingredient data and product and material specifications
- **Highly regulated/need for compliance** – Greater regulatory controls on label information and mandated warning information, at both governmental and local market levels are ever changing and becoming stricter. Companies must ensure that their packaging data is correct in order to avoid recalls, litigation, risks to the corporate image and costly settlements
- **Consumer safety** – Defects/errors in product packaging are the number one reason for recall or withdrawal from sale
- **Globalization of brands** – Consumer products companies need to maintain consistency of branding across geographically dispersed markets, especially with regard to increased packaging complexity as many configurations of a pack are created for different regions and consumer types

It should be noted that most if not all of these characteristics can be equally applied to other key business activities, including idea management, new product development and introduction (NPD&I), global specification management, strategic sourcing, quality management and regulatory compliance.

► Siemens approach to packaging and artwork

Siemens solutions provide an environment that facilitates the delivery of great design creativity, through targeted briefing and the control of brand assets and process. In this environment designers work from a complete unambiguous design brief, including technical specification information that facilitates the creative process by providing the context in which to create a design concept that is fit for purpose.

Leading consumer products companies are benefiting from using Siemens' Teamcenter PLM solution as their packaging and artwork management platform to drive packaging and artwork from concept to shelf. Reported results include increased capacity to produce new packages by 35 percent, 20 percent to 40 percent reduction in process cost and 25 percent to 50 percent reduction in cycle time. In addition, the numbers of quality defects have decreased whilst productivity metrics have risen correspondingly.

Fundamental to achieving these benefits is making the packaging and artwork implementation process more efficient. Siemens believes that this can best be achieved by consumer products companies partnering with a solution provider who has a full appreciation of the process and the roles and responsibilities of the consumer products company, designer, artwork house, reprographic companies and printers. This section will introduce Siemens' approach to packaging and artwork.

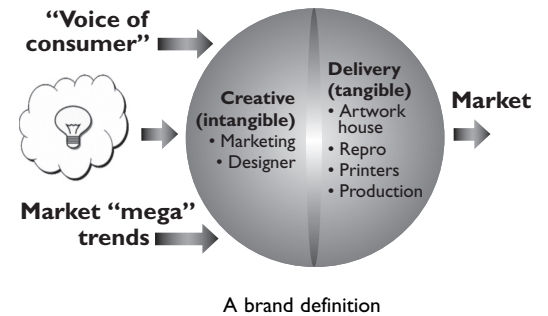
There are two sides to the brand implementation process, illustrated in the figure on the right. The creative, marketing led aspect where designers, in-house or external agencies, are charged with producing great design concepts and the delivery aspect concerned with the production of the actual printed packaging typically involving artwork houses, reprographic companies and printers.

It is Siemens' experience that it is the cultural, communication and information sharing disconnects between the key stakeholders across these two aspects of the process that is the root cause of design iterations, rework and late stage changes in today's packaging and artwork processes.

Based around a secure central repository of all packaging and artwork information, including brand assets, design briefs, specifications, approved texts, job bags and project data etc., the Teamcenter solution captures and manages IP across the two aspects of the implementation process. As a result stakeholders have access to the right information at the right time in order to execute efficiently and effectively.

An example of the power of the Teamcenter solution is its ability to relate the different types of packaging and artwork information, creating master profile templates that link together cutter profiles, brand assets, legal elements and related technical specification information, including printing and packing line criteria and any other packaging technical criteria, into a reusable hierarchy. This approach can significantly speed up and reduce the cost of a design process that is looking to create a new artwork that may only have minor differences from an existing one e.g. a brand extension for a beverage such as a new flavor.

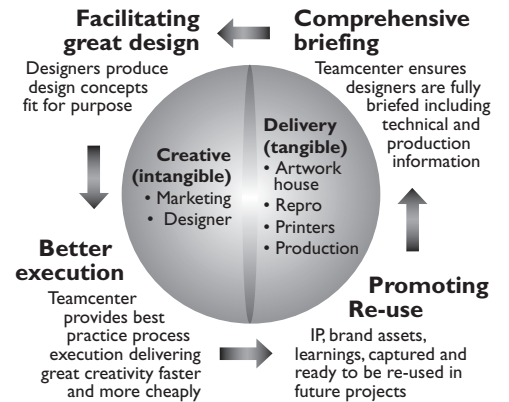
Additionally, Siemens recognizes that through capturing the packaging complexity an organization is, by definition, capturing most if not all of the brand. As a result, the captured intellectual property (IP) and brand assets can be re-used effectively to facilitate the implementation of other branded marketing collateral across the enterprise.



The figure on the right illustrates how Teamcenter supports the process, providing an environment that both facilitates good design that is right first time, and the repeated delivery of this great creativity faster and more cheaply to market, capturing the lessons learned to speed future projects.

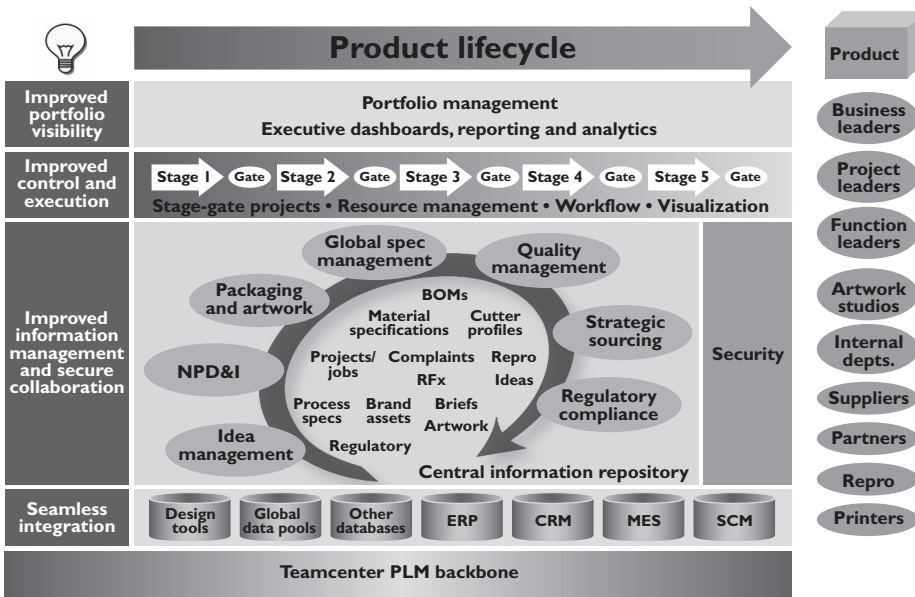
The value to a consumer products company in applying Teamcenter PLM technology to their packaging and artwork process can be summarized as follows:

- **Total control of brand assets** – reduces costs and promotes brand consistency through greater re-use, rationalization of packaging components and the increased ability to manage increased product/packaging complexity. Additionally, as Teamcenter's central repository holds all artwork electronically it provides a future proof platform, enabling a company, when ready, to move from the traditional two stage artwork file/repro file process to a single production file in order to realize significant time-to-market and cost reduction benefits. Teamcenter enables a company to develop and implement a strategy to deliver the brand digitally across all media
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► What is Teamcenter?

Teamcenter is Siemens' market leading product lifecycle management (PLM) solution supporting the mission critical business processes responsible for maximizing top line growth and profitability. These processes include idea management, new product development and introduction (NPD&I), packaging and artwork, global specification management, strategic sourcing, quality management and regulatory compliance.



Teamcenter solution overview

The Teamcenter solution incorporates the following business functionality to support consumer product companies' key business processes:

- A central secure repository, providing a single point of access to all product information across the consumer products lifecycle
- Clear and transparent management reporting of all innovation pipeline activity
- Secure collaboration of information across the value chain irrespective of geography
- Better process execution through support for stage gate projects, workflows and resource management
- Portfolio and project management
- Collaborative review and markup of artwork and documents
- Electronic signatures, security and full audit trails
- Compliance with industry regulations such as 21 CFR Part 11
- Collaborative supplier relationship management platform
- A single investment in technology, one solution platform many applications
- Seamless bi-directional integration with other mission critical business systems, including ERP, SCM and CRM

By supporting the complete consumer products lifecycle, from the earliest consumer insight through product development to retailer shelf, use and disposal, Teamcenter can evolve into the corporate backbone for all product related information, enabling companies to align and synchronize disconnected processes and initiatives, in order to achieve greater results in terms of time-to-market, cost reduction and compliance.

This section discusses some of the challenges facing the consumer products packaging and artwork process and how the Teamcenter solution helps companies to repeatedly deliver great creativity faster and more cheaply to market, whilst ensuring the information on the packaging is accurate and satisfies regulatory requirements.

Artwork right first time

Issues

The briefing process is fundamental to achieving the goal of right first time implementation. Designers all too frequently receive design briefs in varying formats that are incomplete and open to mis-interpretation. As a consequence the resulting design concepts are typically not fit for purpose, i.e. they don't conform to branding standards, use too many colours, won't fit on the machines, non-varnish areas are out of specification, pack copy requires amendment etc. and typically require many iterations and rework before being ready for production. There are a number of negative impacts to this:

- Rework effectively destroys creativity as the design is often compromised or diluted to satisfy production requirements. It is not unusual for projects to go through a correction cycle at least 3 times
- Origination processes go over budget and deadlines are missed, leading to delayed product launches
- Marketing spend 50 percent of their time fire fighting bad artwork rather than adding marketing value

Many problems stem from the designer not understanding the impact of technical/production considerations on the design, such as implications of print process and conversion techniques, use of colour, minimum point size and general rules of engagement. In today's processes the brief received by the designers typically will incorporate little or no technical/production related information.

Solution

Teamcenter allows companies to implement a clear, consistent design brief that captures production and technical information, creative direction, local market requirements and dynamically references the relevant brand assets.

Designers now work from a complete unambiguous design brief. The provided technical information facilitates the creative process by giving the designer the context in which to create a design concept that is fit for purpose.

Teamcenter's powerful workflow capability drives the briefing and approval process. As a result only those stakeholders' authorized are involved in the briefing process.

Better process control and ownership

Issues

A lack of process transparency and control is symptomatic of the problems facing current packaging and artwork processes. The very nature of the process requires consumer goods companies to work closely in an outsourced environment with designers, artwork houses, reprographic companies and printers.

In the attempt to ensure deadlines are met companies can become over reliant on their reprographic and print suppliers, particularly if the artwork supplied to them is badly drawn.

For example, it is not uncommon for the artwork to be amended by the reprographics company to facilitate printing. If the product is sold across multiple markets this could potentially involve multiple suppliers and multiple print processes. In such a scenario, the reprographics companies involved may address the situation differently, resulting in inconsistent implementations across markets. As a consequence the consumer products company effectively loses control of the brand assets.

Solution

Teamcenter provides a central repository for all packaging and artwork information accessible by all stakeholders in the process. The solution's in-built security model ensures that suppliers only access information pertinent to them. As a result the consumer products company maintains total control of their brand assets.

Greater process efficiency and control is provided by Teamcenter's stage-gate project management capability. Best practice project templates propagate best practices so that stakeholders can collaborate and share information in a dynamic environment that does not hamper creativity.

Faster, more rigorous artwork approvals

Issues

Artwork approvals are notoriously slow. The sheer amount of information that appears on a product's packaging mandates the need for the artwork approval process to involve many different entities from within the business and often across multiple geographic regions, for example legal need to ensure compliance with regulatory requirements, marketing must check adherence to branding standards and packaging execution must ensure printability.

Delays in approvals are often exacerbated by approvers concerning themselves with issues outside of their particular remit, for example R&D commenting the use of colours in the design rather than just focusing on the accuracy of the ingredient line copy.

Artwork will usually undergo a number of approvals during the development process i.e. at concept, artwork assembly and repro stages. It can be the case that rigorous approval only really occurs at the point of volume production, at which stage any errors are more costly to rectify.

Solution

Teamcenter's powerful workflow engine makes the whole artwork approval process more efficient. Approvers are alerted immediately when artwork is ready for approval and instructed on which aspects of the artwork they are approving.

Electronic signoff and a full audit history ensure transparency and accountability throughout the artwork development process.

The visualization capabilities provided in Teamcenter enable online collaborative artwork review and markup. Approvers are therefore able to review and approve artwork irrespective of their location, time zone etc.

Increasing re-use of brand assets and maintaining brand consistency

Issues

In the vast majority of companies trying to locate the correct brand logo or other packaging component to use on a pack is often a long and thankless task. There are typically two scenarios, a company has no database to capture brand assets or it has multiple unsynchronized locations where brand assets can be found. This leads to confusion as the designer cannot be sure which the correct version is. As a consequence it becomes faster and easier to recreate rather than re-use. The impact on the business is as follows:

- Most projects involve duplication of graphic work previously done in previous projects, wasting valuable time and money
- Detrimental effect on brand consistency. The approach can lead to a proliferation of brand assets particularly where products are sold in different geographic markets. Making it more difficult to ensure graphics and colours comprising the brand are used consistently across global markets

Solution

Teamcenter provides a central repository for all packaging and artwork information including design briefs, brand assets, artwork, technical drawings, approved text and claims, material specifications, market research data and rules of engagement. All information is version controlled, ensuring all stakeholders work from the same version.

The solution provides the ability to relate the different types of information together, enabling the creation of master profile templates that link together cutter profiles, brand assets, legal elements and approved label text into a reusable hierarchy. This approach can significantly speed up and reduce the cost of a design process that is looking to create a new artwork that may only have minor differences from an existing one e.g. a brand extension for a beverage such as a new flavour.

Powerful search capabilities enable existing brand assets to be quickly found facilitating their re-use.

Protecting intellection property

Issues

In today's climate it is very important that consumer products companies are able to protect themselves against copycats, counterfeiters and loss of value knowledge to competitors through employee attrition. An inability to protect corporate image from false claims can lead to a loss of brand image, market share, revenues and expensive compensation payouts.

Solution

Teamcenter provides a central repository for all packaging and artwork information including material specifications, artwork and technical drawings, approved text, label claims, brand assets and design briefs. The brand assets are held securely in the correct format. Powerful search capabilities enable the correct brand assets to be quickly found reducing the administrative overhead in preparing and supporting legal activities.

Improving supplier management and price negotiation

Issues

Consumer product companies can often become over reliant on their reprographic and print suppliers, and as result are open to commercial exploitation.

In order to win the contract, suppliers will often position themselves as "added value". However, rather than reflecting faster, better quality printing these added value services often revolves around "sorting out" artwork problems to facilitate printing. Typically this happens on a project by project basis without addressing the cause of the problem, with the consumer products company paying for the privilege. This leads to:

- Inconsistent implementations of branding
- By becoming "locked in" to the supplier this removes the flexibility of selecting which partners can be used on a project
- Over dependence on anyone supplier places the consumer products company in a weak position with regard to price negotiations

Solution

By facilitating artwork right first time and delivering greater process visibility and control Teamcenter can enable a consumer product company to better leverage its supply chain partner relationships. Full transparency of the processes creates a competitive landscape where procurement can leverage strategic sourcing approaches:

- Consumer product companies that are able to deliver artwork that is consistently right first time are in a position to put service level agreements (SLA's) in place and negotiate a keen price from their supplier chain partners
- Total capture of the voice of supplier – Teamcenter's collaborative supplier relationship management platform including supplier capabilities repository and powerful visualization features allow the capture the voice of suppliers for optimization of the supply chain and extra packaging innovation capabilities

About Siemens PLM Software

Siemens PLM Software, a division of Siemens Automation and Drives (A&D), is a leading global provider of product lifecycle management (PLM) software and services with 4.3 million licensed seats and 47,000 customers worldwide.

Headquartered in Plano, Texas, Siemens PLM Software's open enterprise solutions enable a world where organizations and their partners collaborate through Global Innovation Networks to deliver world-class products and services.

For more information on Siemens PLM Software products and services, visit www.siemens.com/plm.

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