



Aberdeen *Group*

Formula-Based Product Development: Recipes for Compliance and Success

*Winning in the Food and Beverage,
CPG, Health and Beauty Aids,
Pharmaceutical and Chemicals Industries*

Business Value Research Series

November 2004

Offered by



UGS is a leading global provider of product lifecycle management (PLM) software and services with nearly 4 million licensed seats and 46,000 customers worldwide. Headquartered in Plano, Texas, UGS' vision is to enable a world where organizations and their partners collaborate through global innovation networks to deliver world-class products and services, while leveraging UGS' open enterprise solutions to transform their process of innovation. For nearly four decades, UGS' PLM solutions have helped companies speed time-to-market, improve quality and innovation and increase revenue. In 2004, UGS was the first PLM solutions provider to report \$1 billion in annual revenue.

Aberdeen *Group*

Your complimentary access to this Aberdeen*Group* report is made possible through a special distribution license granted to UGS. Aberdeen*Group* bears sole responsibility for the research findings and analysis included in this report. The findings and views expressed in this report do not necessarily reflect the views of the licensee.



Executive Summary

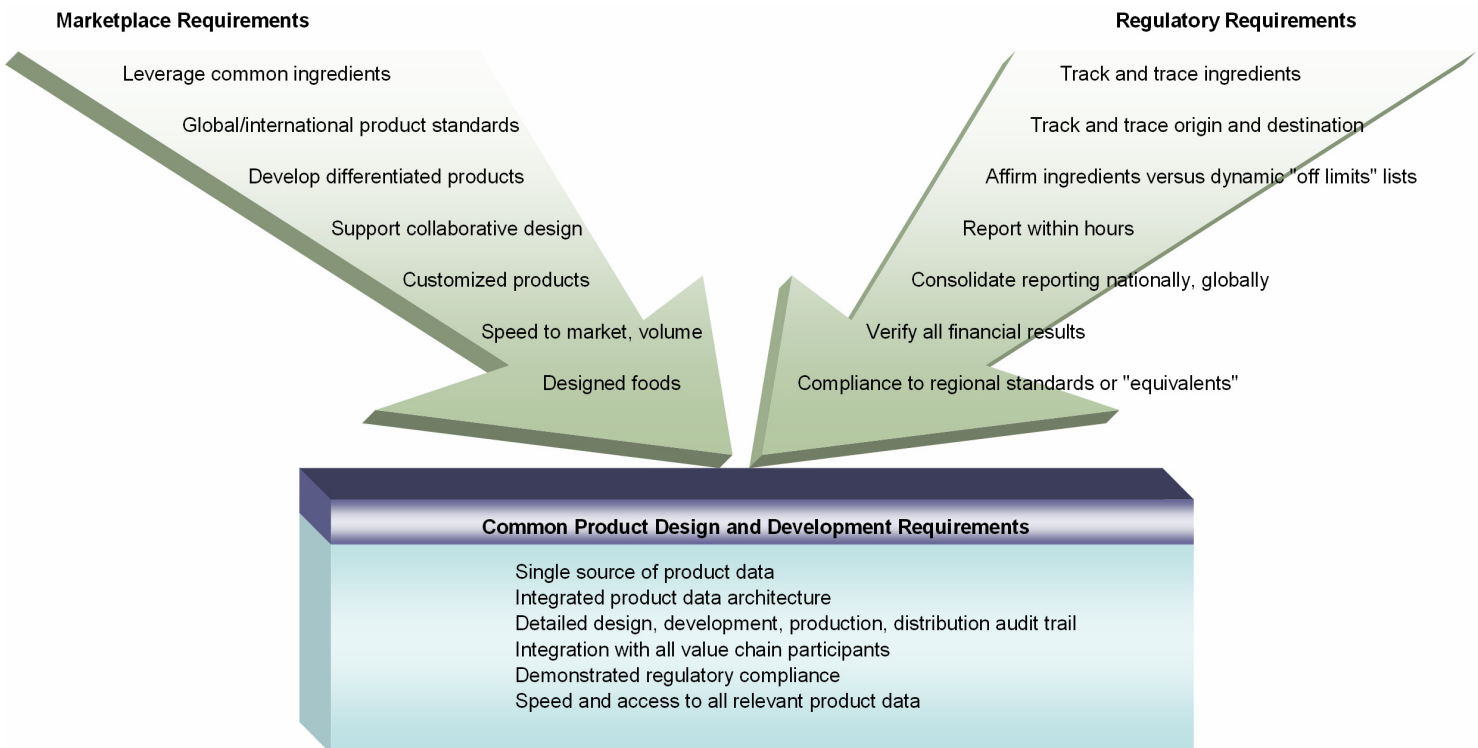
Market Dynamics are Compelling Changes in Product Development Strategies

Product proliferation, brand globalization, shortened product lifecycles, market fragmentation, erosion of brand loyalty, and commoditized pricing are forcing companies in formula-based consumer industries to improve their product development strategies and supporting technologies to maintain market competitiveness. At the same time, requirements for regulatory compliance have grown especially intrusive and complex, while growing customer demands continue to compel investment in unique non-discretionary formula-based product design and development decision and information tracking processes and systems.

These pressures and opportunities from the marketplace and those from compliance drive process companies to a **common** set of requirements and solutions — thus opening up the way for enterprises to more effectively and profitably leverage their compliance-dictated product design and development investments.

Winning Strategies Integrate Market and Regulatory Requirements

The Convergence of Marketplace and Regulatory Requirement



Source: AberdeenGroup, November 2004



Best-in-class process companies use formula-based product design and development performance to leverage the need for customer and regulatory compliance for competitive advantage — in speed to market, market penetration, and total development costs - and not just as a non-value adding requirement.. The unique requirements, urgency, and opportunity in formula-based consumer industries are significantly larger, more integrated, and more complex than those for discrete industries. Building this strategy for dual-purpose processes and solutions from product formulation and design inception is critical to achieving the maximum potential for realizing this advantage. Aberdeen research shows a minimal difference between the existing and emerging regulatory and customer systems requirements and those that are ideal for exploiting marketplace opportunities.

The Compliance Design Value Proposition Justifies Investment

Investments in business processes and the solutions necessary to ensure regulatory compliance pay for themselves on a stand alone basis, within the confines of the formula-based product design and development cost control.

These cost improvements include:

- Reduced product design and development costs
- Reduced costs and duration of product trials
- Reduced recalls
- Reduction of fines, penalties and fees from improved regulatory reporting compliance

The Strategic Value Potential is Game Changing

Leveraging the business process and solution infrastructure needed for regulatory compliance creates the opportunity to drive strategic competitive advantage in the marketplace by expanding into new market segments and products, and more quickly exploiting emerging product opportunities. This is especially the case for process companies taking advantage of the regulatory certification process for functional foods — those foods that are designed and developed with the express purpose of addressing a specific dietary or health need.

The following are a few of the areas where brand and market value can be sharply increased with an integrated strategy:

- Increased initial speed to market and speed to volume
- Synergistic category demand pull from expanded product footprint
- Reduction in wasted/mistimed sales and marketing costs
- Manufacturing cost reductions and additional sales potential from increased available production capacity
- Reduced procurement costs through common ingredients, economies of scale, etc.



Aberdeen Recommendations

Best-in-class process companies deploy a winning integrated formula-based product design and development strategy. These actions are designed to achieve two primary objectives:

1. Support competitive marketplace opportunities while addressing regulatory requirements
2. Capture the benefits derived from compliance design and the extended strategic value potential from the marketplace

Aberdeen research has determined a specific set of actions that have proved most beneficial.

- Identify and maintain compliance requirements and intelligence
- Standardize product design and development processes and embed compliance requirements
- Consolidate all product data into a single product record
- Improve access, accuracy, and breadth of this product record
- Align product and compliance roadmaps
- Establish consistent metrics and incentives to ensure compliance from all product stakeholders
- Include trading partners in the design, development, and compliance processes



Table of Contents

Executive Summary	i
Market Dynamics are Compelling Changes in Product Development Strategies	i
Winning Strategies Integrate Market and Regulatory Requirements	i
The Compliance Design Value Proposition Justifies Investment	ii
The Strategic Value Potential is Game Changing	ii
Aberdeen Recommendations	iii
<i>Chapter One: Market Dynamics are Compelling Changes in Winning Product Development Strategies</i>	1
Marketplace Pressures are Challenging Traditional Strategies.....	1
Regulatory Compliance Requirements are Increasingly Complex and Invasive	2
The Emerging “Regulatory Opportunity”: Functional Foods.....	3
Competitive Framework Key	3
Brand Integrity: A Critical Driver for Best-in-Class Companies.....	3
<i>Chapter Two: Product Requirements to Capture Opportunity</i>	5
The Convergence to a Winning Integrated Product Strategy.....	5
Best-in-Class Process Companies Adopt a Value Chain-Centric Strategy	6
Key Characteristics of a Winning Formula-Based Product Requirements Strategy	6
<i>Chapter Three: Compliance Design Value Proposition</i>	8
Developing the Business Case for Compliance-Centric Design	8
Supply Chain Track and Trace Critical to a Winning Strategy.....	9
Potential Improvements across the Maturity Spectrum.....	9
<i>Chapter Four: The Strategic Value Potential is Game Changing</i>	11
Market Penetration and Profitability	11
Reductions in Marketing and Sales Costs	11
Manufacturing Related Profit Opportunities	11
Reduction in Procurement Costs	12
<i>Chapter Five: Aberdeen Recommendations</i>	13
Author Profile	15
<i>Appendix A: Research Methodology</i>	16



Table of Contents

<i>Appendix B: Related Aberdeen Research & Tools</i>	18
About <i>AberdeenGroup</i>	19



Figures

Executive Summary: The Convergence of Marketplace and Regulatory Requirement	i
Figure 1: Best-in-Class Companies Target Brand and Trading Partners as Equally Strategic	4
Figure 2: The Convergence of Marketplace and Regulatory Requirements	5
Figure 3: Best-in-Class Process Companies Strive to Embed Trading Partners into Regulatory and Development Strategies	6
Figure 4: Best-in-Class Plan for Far-Reaching Business Benefits	8
Figure 5: Best -in-Class Process Companies Consider Supply Chain Track and Trace Critical	9

Tables

Table 1: Best-in-Class Process Companies Generate Significantly Better Improvements	10
Table 2: Areas of Average Business Improvement across Maturities	10



Chapter One:

Market Dynamics are Compelling Changes in Winning Product Development Strategies

The marketplace for companies providing formula-based consumer products is undergoing a dramatic and long-term set of structural changes. These changes are redefining fundamental brand dynamics and forcing competitors to develop much more flexible, integrated and holistic product design and development strategies. In parallel, a global tidal wave of customer and process industry-centric regulatory requirements is driving these same companies to invest in improvements to product development processes and technologies.

The key question is: How can these pressures and requirements converge into a single integrated and competitively superior solution?

Marketplace Pressures are Challenging Traditional Strategies

Formula-based consumer and process industries are witnessing a sharp acceleration of trends that began to manifest within the last five years, but which have become so endemic that traditional product development strategies are no longer adequate to preserve marketplace success.

- **Product proliferation** and price commoditization pressures in an era of consolidating retail shelf space demand increasingly differentiated products to get market acceptance.
- **Brand globalization** requires the ability to manage product design and development on a global basis.
- **Shrinking product lifecycles** demand shorter development cycles and more immediate market penetration.
- **Strategies to promote global and multi-national brands** in a time of eroding brand loyalty and the rise of retailer-branded and private-label products demand a synchronized product development roadmap.
- **Inclusion of third parties in the design process** puts a premium on better collaboration and coordination to ensure that the growing dependence upon broadly distributed design, production, and procurement follows a common set of processes.
- **Customers** from Wal*Mart to Safeway are demanding special product, packaging, and distribution configurations in support of their own differentiated go-to-market strategies that are proving very expensive to support with traditional approaches.
- **Empowered consumers** are putting a premium on products that they consider more personalized, forcing the development of mass customization design and manufacturing strategies.



- **Consumer concerns about food and medicine quality** due to wide-spread opening of US borders to foreign imports raise the stakes to ensure “no defect” products — the consumer is rapidly developing a “zero tolerance” buying preference policy.

Regulatory Compliance Requirements are Increasingly Complex and Invasive

Even a cursory look at the growing list of general and process industry-specific regulatory requirements over the last twelve months demonstrates that issues of terrorism, health and safety, and environment are tremendously expanding the scope, level of detail, timing, and cost of staying in compliance — as well as the severe market and regulatory costs of falling out of compliance.

- **Food Allergen and Consumer Protection Act (FALCPA)** — requires (by January 1, 2006) that food manufacturers identify in “plain, common language” the presence of milk, egg, peanut, tree nut, fish, shellfish, wheat, and soy on their product labels, including for the first time, spices, flavorings, additives, and colorings.
- **Trans Fatty Acids Labeling** — the FDA now requires food manufacturers (by January 1, 2006) to separately list trans fatty acids, in addition to saturated fat and cholesterol, on nutrition facts and some supplemental fact panels.
- **FDA Requirements for HACCP (the Bioterrorism Act)** — requires the ability for all participants in the food chain to be able to track and trace both the origin and the destination of all foods within a narrow, four hour response window.
- **Country of Origin Labeling (COOL)** — the country where certain fresh products originated and were processed must appear on the label.
- **European Union General Food Law Regulation** — covering all participants and stages in the food chain, mandates that all imports of food must meet European Union food law standards or equivalent conditions.
- **Registration, Evaluation and Authorization of Chemicals (REACH)** – proposed European Union legislation will require by 2006 chemical producers to provide authorities, the public and customers along the supply chain with basic toxicity and exposure information. Absent such information, the chemical will not be allowed on the market.
- **European Cosmetic Directive 76/78/EEC – 7th Amendment** – the animal testing ban in six years for both cosmetic ingredients and the European sale of cosmetic products has been extended to include substances identified by the EC as an important cause of contact-allergy reactions in fragrance-sensitive customers.
- **Sarbanes-Oxley** — demands that all public companies are able to demonstrate documented processes and controls to back up all financial statements.

The unique requirements, urgency, and opportunity in formula-based consumer industries are significantly larger, more integrated, and more complex than those for discrete industries.



Brand globalization is also putting heavy pressure on the ability to identify, align, and comply with different regional requirements in the same time frame to support global product launches.

The Emerging “Regulatory Opportunity”: Functional Foods

One area where these growing regulatory requirements directly result in an *acceleration* of market opportunities lies in the realm of functional foods — those foods that are designed and developed with the express purpose of addressing a specific dietary or health need.

A great example of this is Quaker Oats. Quaker Oats developed a range of specially prepared breakfast meals designed to address the desire of different consumer segments for low carbohydrate content, high fiber, enriched vitamins, and/or low fat content. Similar types of focused tailored foods are appearing in fruit juices, dairy products, prepared meals, soups, and numerous other everyday products. Similar efforts are being made by a variety of companies to include Omega 3 and 6 into their formulations to fight cholesterol.

The new FDA regulations that allow and support these qualified claims provide a critical “stamp of approval” on the validity of these tailored products, accelerating their acceptance in the marketplace and enabling a much more rapid market share penetration in each specific consumer segment.

Brand Integrity: A Critical Driver for Best-in-Class Companies

The strategic objectives of best-in-class process companies as they approach the twin issues of regulatory compliance and seizing the marketplace opportunity are markedly different from those of their competitors. Consumers have evolved to a “zero tolerance” buying propensity that has seriously raised the stakes for getting the formulation and the packaging “right” in the first place, and to finding out post launch as soon as possible if there are issues in these areas that need to be addressed. This helps explain the relatively higher profile given to preventing brand damage and including trading partners as part of a holistic design and development strategy and deployment.

Competitive Framework Key

The Aberdeen Competitive Framework defines enterprises as falling into one of the three following levels of practices and performance:

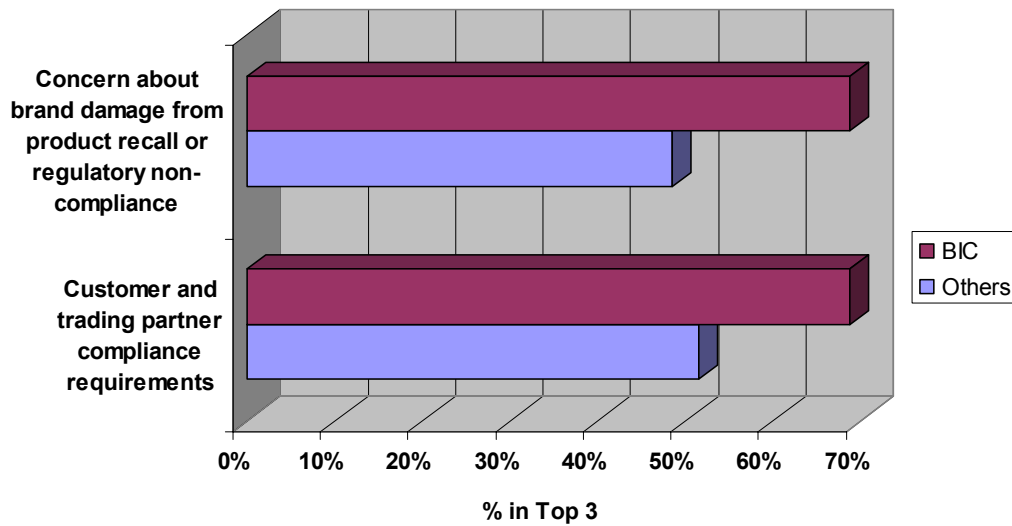
Laggards (30%) —practices that are significantly behind the average of the industry

Industry norm (50%) — practices that represent the average or norm

Best in class (20%) — practices that are the best currently being employed and significantly superior to the industry norm



Figure 1: Best-in-Class Companies Target Brand and Trading Partners as Equally Strategic



Source: "How Supply Chain Leaders Protect Their Brands", AberdeenGroup, September 2004



Chapter Two: Product Requirements to Capture Opportunity

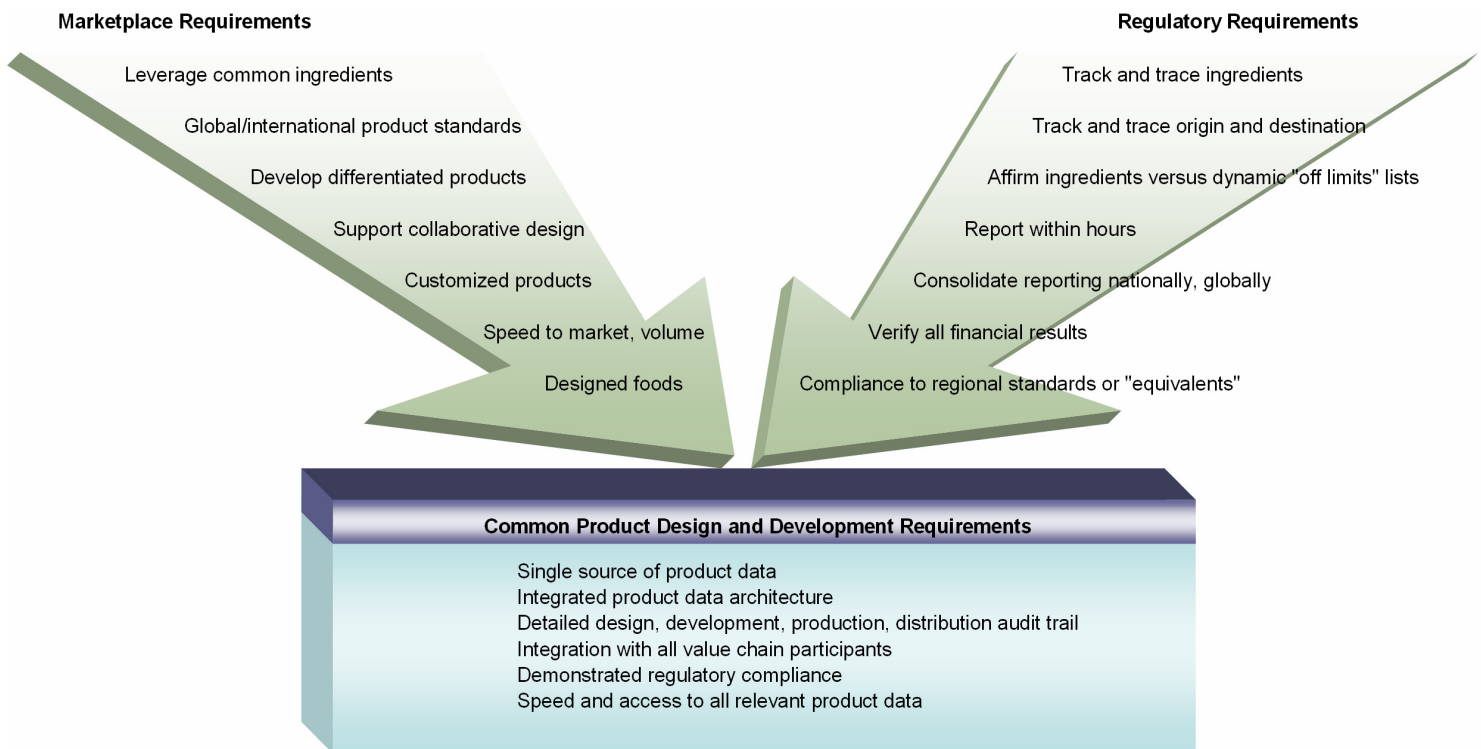
Aberdeen research has determined that best-in-class process companies are implementing a strategy based on the recognition that marketplace and regulatory requirements translate into a common set of best practices, including formula-based product design and development capabilities and technologies.

The existing product information architecture for most companies was not designed to support this scope of regulatory requirements. The cost of improving business processes and technologies to meet these standards represents a significant part of many information technology budgets.

The Convergence to a Winning Integrated Product Strategy

Figure 2 below illustrates the approach taken by best-in-class process companies to turn the non-discretionary investment that regulations are forcing them to make into a competitive advantage, by leveraging the same solutions to accelerate market penetrating product development.

Figure 2: The Convergence of Marketplace and Regulatory Requirements



Source: AberdeenGroup, November 2004

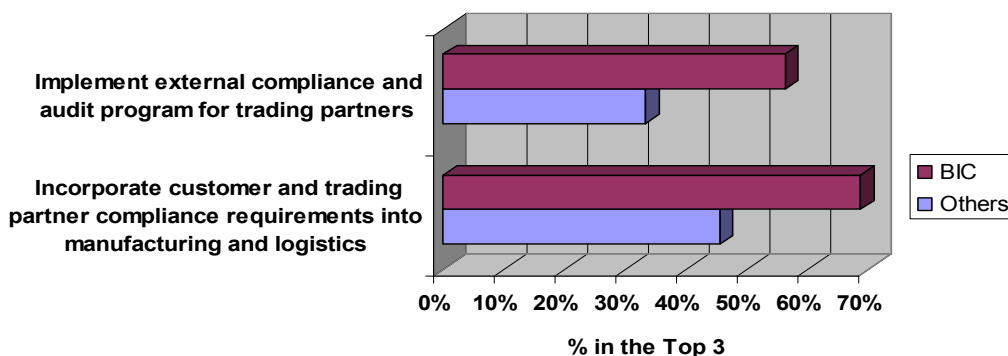


A major supplier of processed consumer goods was faced with the spiraling need to supply regulatory authorities with detailed formulation and usage data, and also support the growing need for a product formulation strategy to reduce time-to-market and drive procurement economies of scale. The solution: “Working from the *spirit* of the EH&S compliance drives competitive advantage; we did not have to do anything dramatically different for EH&S compliance once we targeted both the strategic and tactical benefits from an integrated product design and development program.”

Best-in-Class Process Companies Adopt a Value Chain-Centric Strategy

One critical element that distinguishes the design and development strategies of best-in-class process companies from their competitors is the importance that they attach to the inclusion of trading partners at all key stages of regulatory compliance and formula-based product design, development, and deployment (Figure 3).

Figure 3: Best-in-Class Process Companies Strive to Embed Trading Partners into Regulatory and Development Strategies



Source: “How Supply Chain Leaders Protect Their Brands”, AberdeenGroup, September 2004

This integrated and inclusive strategy has profound implications for the areas of business value that best-in-class process companies are targeting as leverage from regulatory compliance, and the prioritization of their initiatives.

Key Characteristics of a Winning Formula-Based Product Requirements Strategy

For each of the common requirements identified in Figure 2, best-in-class process companies target a very specific overlap of marketplace and regulatory requirements to maximize their ability to support both dimensions in a single integrated solution.

Integrated Product Data Architecture — for any individual product this will answer any relevant regulatory question and also permit much more rapid iterations of product design and deployment across all activities in the value chain. This also allows cross-referencing across any dimension of the entire product portfolio globally and at the



same time supports more rapid and effective developments of category and product family products and leverages the use of common ingredients and processes.

Detailed Audit Trail — supports the decision and material flow trail and enables a continuous learning and best practices capability that reduces design, trial, and deployment resources and time.

Integration with Value Chain Participants — supports the ability to quickly report on all product and ingredient sourcing and distribution data, as well as facilitating collaborative design and distribution/marketing/sales strategies.

Demonstrated Regulatory Compliance — reducing the imposition of fines, fees, and related charges for non-compliance in time or in substance, and provide a catalytic impact on ready market uptake for new and modified products.

Speed and Access to all Relevant Product Data — *allows* direct and immediate access for employees mandated to demonstrate regulatory compliance information while at the same time permitting all members of the product design, development, and employment team comparable access for their business activities.

This powerful set of common best practices strongly influences areas in the value chain that best-in-class process companies focus upon to drive the business economies that justify the required investments in improved product design and development business processes and technologies.

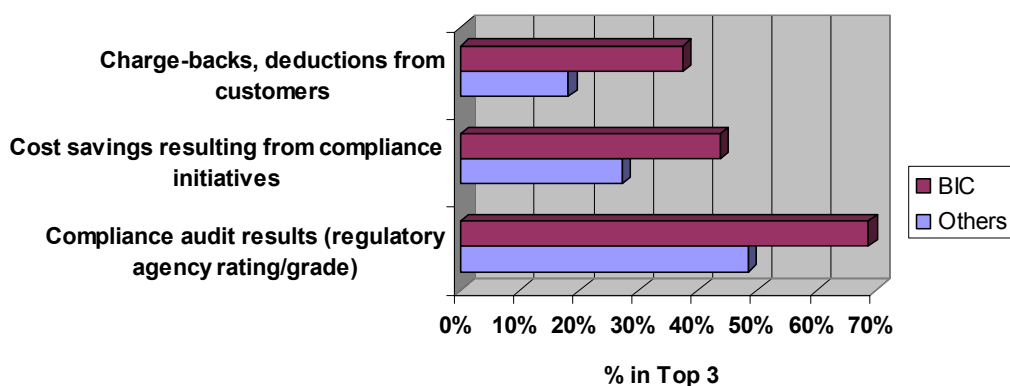


Chapter Three: Compliance Design Value Proposition

Developing the Business Case for Compliance-Centric Design

Aberdeen research, as illustrated in Figure 4, determined that there are three major areas where it is possible to develop a compelling business case for an initiative to improve formula-based product design and development capabilities, based strictly on direct benefits. The following section demonstrates the additional — and potentially huge — strategic value.

Figure 4: Best-in-Class Plan for Far-Reaching Business Benefits



Source: “How Supply Chain Leaders Protect Their Brands”, AberdeenGroup, September 2004

Regulatory Cost Improvements — this refers to the reductions in potential fines, penalties, and fees that would otherwise be paid as the result of failure to comply in a timely manner to regulatory reporting requirements. Best-in-class companies anticipate a much higher cost of non-compliance than competitors.

Cost Savings from Compliance Initiatives — nearly half of best-in-class are planning to leverage compliance regulations to reduce formula-based product development time and costs, and to take advantage of improved product quality. The main areas of cost improvement identified by best-in-class companies include:

- *Reduced product design and development work* — through time savings in information access and design reuse
- *Reduced cost and duration of product trials* — getting “closer to the pin” with initial system-aided formulations and access to best practices and “minefield avoidance”
- *Reduction in the costs of product recalls* — through improved quality control and track and trace capabilities that reduce the likelihood of using “off limits” ingredients



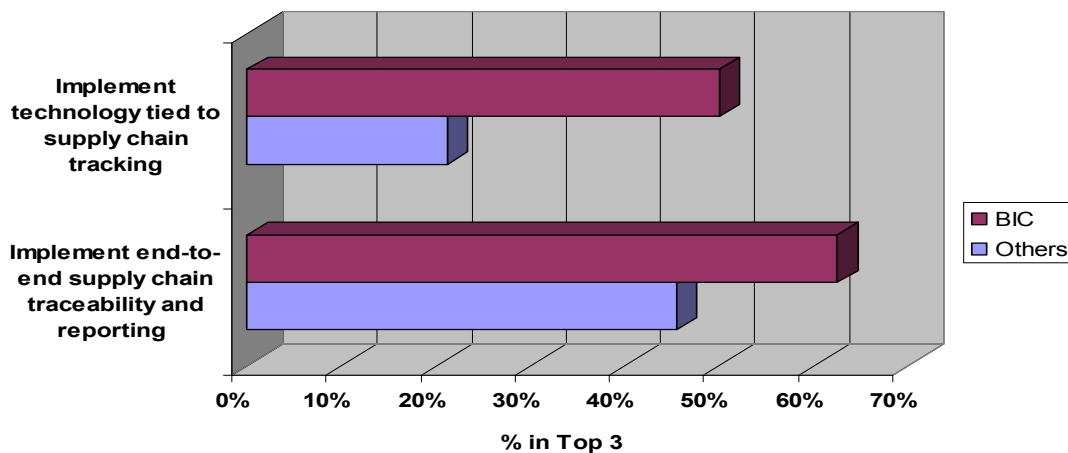
Reduction in Charge-backs, Deductions — a clear audit trail of agreed to deductions and charge-backs necessitated by Sarbanes-Oxley will also reduce customer-initiated or unwarranted invoice reductions.

Supply Chain Track and Trace Critical to a Winning Strategy

Proactive maintenance of brand integrity has been identified as a critical objective of an effective formula-based product design and development strategy. With the growing use of contract manufacturers and the expansion of multi-level distribution networks, best-in-class process companies are very sensitive to the supply chain wide requirements for accelerating time to market for new and enhanced products, and the companion regulatory compliance needs. The ability to very quickly identify which channels, customers, and geographies have products that are over- or under-performing is vital to the strategy of post-initial launch product and/or market prioritization modification. Similarly, immediate feedback on issues related to health and safety with ingredients, preparation, and holding containers is essential to design and/or development changes needed to truncate potentially damaging market impacts.

This need is demonstrated in Figure 5, which shows best-in-class commitment to technology investments that are closely tied to movements across the value chain.

Figure 5: Best -in-Class Process Companies Consider Supply Chain Track and Trace Critical



Source: "How Supply Chain Leaders Protect Their Brands", AberdeenGroup, September 2004

Potential Improvements across the Maturity Spectrum

The following quantified metrics can be used to both develop a compelling business case and to benchmark your expected improvements in business performance against Aberdeen’s researched results.

Table 1 indicates that the average process company achieves impressive improvements in key business metrics as the result of undertaking a formula-based product design and de-



velopment initiative, and integrating regulatory compliance and marketplace requirements. Companies following best-in-class practices do significantly better.

Table 1: Best-in-Class Process Companies Generate Significantly Better Improvements

Improvement Area	Best-in-Class	Industry Norm
New Product % Profit Margin	42%	28%
Time to Volume Cycle % Reduction	12%	8%
% Improvement Product Traceability Time	55%	48%

Source: "How Supply Chain Leaders Protect Their Brands", AberdeenGroup, September 2004

Table 2 indicates that the average improvements for all process companies undertaking an automated product design and development improvement program is impressive

Table 2: Areas of Average Business Improvement across Maturities

Improvement Area	Best-in-Class
Reduction in product costs	17.5%
Reduction in engineering change orders cycle time	75%
Reduction in design cycles	25% - 35%
Reduction in time-to-volume cycles	10%-15%
Reduce search times/improve engineering productivity	15%-20%
New product revenue as a % of total revenue	28%
Counterfeiting, grey market cost reduction	31%
New product costs as a % of planned product costs	69%

Source: "The Design for Compliance Benchmark Report", AberdeenGroup, September 2004



Chapter Four: **The Strategic Value Potential is Game Changing**

While there is clearly sufficient business value in areas of compliance design to justify the investment necessary to improve formula-based product design and development, there is enormous potential to generate the strategic benefits outlined below from the same set of processes and technologies.

Best-in-class process companies approach the whole issue of best formula-based product design and development practices with a clear eye to this strategic value, this helps to explain why they are delivering superior performance.

Market Penetration and Profitability

The highest potential strategic value lies in the opportunity to more quickly get to market, especially with a broader footprint of products, and capture a larger share of emerging or changing categories of needs — the “first mover” advantage.

Not only does this afford the benefits of first to market but, by including trading partners and reducing the likelihood of product recalls and initial customer dissatisfaction, also dramatically increases the probability to more rapidly achieving market share domination — being the recognized leader in the space by both customers and consumers.

This provides a whole range of collateral leverage points from price point flexibility, to the draw of complementary products, to the “shelf space” negotiation power from greater economies of scale.

While this advantage is most clearly demonstrated with new and emerging formula-based product categories, it has similar benefits in areas where products undergo periodic enhancements to extend their overall life cycle — such as health and beauty aids, vitamin supplemented food products, and chemical formulations.

Reductions in Marketing and Sales Costs

When formula-based products are introduced later than planned or are subject to recall there are potentially large-scale sales and marketing costs that have to be invested in market, channel, and customer preparation that are wasted, or whose value is severely reduced.

In addition to these spent costs, there is the need to overcome the negative market reaction to these issues of product quality and availability, often with significantly higher re-launch costs than were envisioned in the initial plan.

Manufacturing Related Profit Opportunities

The inclusion of issues about manufacturability into the formula-based product design and into the definition of appropriate “quality envelopes” for ingredients opens the door to major gains in the manufacturing arena.

Consistent quality specifications significantly reduce the product losses from variations in ingredient quality and also allow the much easier production planning of ideal product



sequences to minimize losses during product changeovers. Consistency of ingredients also contributes to higher net throughputs and reduces the unit cost of production.

Similarly, lower lost time and higher throughputs increase effective available capacity which can result in additional sales and also provide greater flexibility for increasing customer service and reducing the negative impact of “rush” orders.

Reduction in Procurement Costs

Standardization of product specifications, ingredients, and design could allow a much greater concentration of a smaller set of suppliers and inputs, thereby increasing purchasing economies of scale. This will also reduce the cost of monitoring and enforcing material and ingredient input quality compliance.

Taken together these strategic benefits offer the potential for a total business value return many times that of the compliance returns, and is expected to be a major contributor to best-in-class companies maintaining and increasing their product design and development performance gap over their competitors.



Chapter Five: Aberdeen Recommendations

Aberdeen research has determined that there is a specific set of actions that are proven most beneficial and which best-in-class process companies have focused on to deploy this winning integrated formula-based product design and development strategy. These actions are designed to achieve two primary objectives:

1. Support competitive marketplace opportunities while addressing regulatory requirements
 2. Capture the benefits from compliance design and from the extended strategic value potential from the marketplace
- **Identify and Maintain Compliance Requirements and Intelligence** — the short window of opportunity to respond to regulatory compliance requirements, and the growing intrusiveness and complexity of this information demands the establishment of a formal process to identify these requirements and ensure that the required intelligence is resident in the product design and development information architecture.
 - **Standardize Product Design and Development Processes and Embed Compliance Requirements** — having a standard set of product design and development processes will greatly facilitate new product development joint teams, and enable persistent best practices, while at the same time greatly simplify regulatory reporting requirements. The requirements for formula-based products are unique and significantly more demanding, and valuable, than those for the discrete industries.
 - **Consolidate All Product Data into a Single Product Record** — a single integrated product record is a prerequisite to both global and regional product standardization, quality and cost control, and the ability to respond quickly to emerging new marketplace customer preference trends.
 - **Improve Access, Accuracy and Breadth of this Product Record** — ensure that individuals involved in both regulatory compliance and product design and development have direct access to the data and the ability to personalize their views for their specific requirements. Accuracy and scope of this information is essential to supporting a fast response and decision environment.
 - **Align Product and Compliance Roadmaps** — develop and maintain integrated, comprehensive Roads Maps that define and schedule product development and compliance strategies, processes, and technologies. Proactive alignment



of these requirements will ensure the avoidance of costly and time consuming “after the fact” responses.

- ***Establish Consistent Metrics and Incentives to Ensure Compliance from all Product Stakeholders*** — this is a frequently ignored action and yet is responsible for more delays and failures in these types of initiatives than almost any other. For most companies, existing metrics are based on functional silos and are frequently at cross purposes if not outright contradictory. Establishing incentives for adherence to these new metrics and processes provides a strong indication of the commitment of the company to this integrated compliance and development strategy.
- ***Include Trading Partners in Design and Development, and Compliance Processes*** — this means more than simply informing them of the introspective developed processes — rather it suggests a collaborative development of “win-win” processes with the aim at joint marketplace and regulatory success and a pooling of best ideas, processes, and technologies.

These actions should help blend the marketplace and regulatory requirements for the development and deployment of an integrated formula-based product design and development program that exceeds the expectations of all stakeholders and drives product and brand competitive advantage



Author Profile

**Stanley Elbaum,
Senior Vice President Research
Aberdeen Group**

Stan Elbaum is a Senior Vice President of Research and focuses on analysis and assessment of business strategies and processes and technologies that support formula-based product design, development, and deployment. This research extends into the full value chain covering the areas of design for manufacturability, procurement, mass customization, and speed to volume and profitability.

With over 20 years of experience in executive positions in a broad range of manufacturing, software, consulting, and market research companies, Elbaum has been a leader in developing business value frameworks that capture the essence of what distinguishes process companies with best-in-class design and development performance from their competitors.

Elbaum holds a Masters and Bachelor's degree in Chemical Engineering and an MBA from McGill University.



Appendix A: Research Methodology

Between June and September, 2004 *AberdeenGroup* carried out a series of three benchmark research studies into the area of design and deployment in the formula based process and consumer products industries:

- “Product Development in Consumer Industries Benchmark”, in conjunction with Industry Week magazine;
- “How Supply Chain Leaders Protect Their Brands” with Processing Magazine; and
- The Design for Compliance Benchmark Report with Control Engineer magazine.

The research included detailed surveys, interviews, and analysis with over 500 executives and decision makers across a wide range of consumer industries, with particular emphasis on those involving product formulations in their development. These results have been supplemented in November through an additional set of targeted interviews and analysis.

There were four main areas that this research explored in depth:

1. The marketplace and regulatory pressures that were redefining the requirements for best-in-class formula-based design and development capabilities
2. The unique requirements for formula-based design and development processes and technologies that supported regulatory requirements and those aimed at exploiting marketplace opportunities
3. The approach and strategies taken by process companies with best-in-class performance in formula-based design and development in addressing these twin requirements
4. The business value proposition for investment in improving formula-based design and development processes and technologies

This report is intended to identify emerging best-in-class practices in formula-based product design and development in process and consumer products industries in terms of the integration and alignment of marketplace and regulatory requirements.

The composite of respondents from the three studies had the following characteristics:

- Job Title/Function — The research samples included respondents with the following job titles: executives (20%), director level (34%), and manager and other (46%).
- Industry — The research sample included respondents from consumer industries such as consumer packaged goods, food and beverages, pharmaceutical manufacturing, biotech, and specialty chemicals.
- Geography — Study respondents comprised people from both North America (70%) and global (30%).



- **Company Size** — about 35% of respondents were from small companies (annual revenues < \$50 million), 38% were from midsize enterprises (annual revenues between \$51 million and \$1 billion), while the remainder (27%) were from companies with annual revenues in excess of \$1 billion.



Appendix B: **Related Aberdeen Research & Tools**

Related Aberdeen research that forms a companion or reference to this report includes:

- The Design for Compliance Benchmark Report (September 2004)
- How Supply Chain Leaders protect Their Brands (June 2004)
- Product Development in Consumer Industries Benchmark (June 2004)

Information on these and any other Aberdeen publications can be found at www.aberdeen.com.



About AberdeenGroup

Our Mission

To be the trusted advisor and business value research destination of choice for the Global Business Executive.

Our Approach

Aberdeen delivers unbiased, primary research that helps enterprises derive tangible business value from technology-enabled solutions. Through continuous benchmarking and analysis of value chain practices, Aberdeen offers a unique mix of research, tools, and services to help Global Business Executives accomplish the following:

- IMPROVE the financial and competitive position of their business now
- PRIORITIZE operational improvement areas to drive immediate, tangible value to their business
- LEVERAGE information technology for tangible business value.

Aberdeen also offers selected solution providers fact-based tools and services to empower and equip them to accomplish the following:

- CREATE DEMAND, by reaching the right level of executives in companies where their solutions can deliver differentiated results
- ACCELERATE SALES, by accessing executive decision-makers who need a solution and arming the sales team with fact-based differentiation around business impact
- EXPAND CUSTOMERS, by fortifying their value proposition with independent fact-based research and demonstrating installed base proof points

Our History of Integrity

Aberdeen was founded in 1988 to conduct fact-based, unbiased research that delivers tangible value to executives trying to advance their businesses with technology-enabled solutions.

Aberdeen's integrity has always been and always will be beyond reproach. We provide independent research and analysis of the dynamics underlying specific technology-enabled business strategies, market trends, and technology solutions. While some reports or portions of reports may be underwritten by corporate sponsors, Aberdeen's research findings are never influenced by any of these sponsors.



AberdeenGroup, Inc.
260 Franklin Street
Boston, Massachusetts
02110-3112
USA

Telephone: 617 723 7890
Fax: 617 723 7897
www.aberdeengroup.com

© 2004 **AberdeenGroup, Inc.**
All rights reserved
November 2004

Founded in 1988, **AberdeenGroup** is the technology-driven research destination of choice for the global business executive. **AberdeenGroup** has over 100,000 research members in over 36 countries around the world that both participate in and direct the most comprehensive technology-driven value chain research in the market. Through its continued fact-based research, benchmarking, and actionable analysis, **AberdeenGroup** offers global business and technology executives a unique mix of actionable research, KPIs, tools, and services.

The information contained in this publication has been obtained from sources Aberdeen believes to be reliable, but is not guaranteed by Aberdeen. Aberdeen publications reflect the analyst's judgment at the time and are subject to change without notice.

The trademarks and registered trademarks of the corporations mentioned in this publication are the property of their respective holders.