

Pursuing a Single Version of the Truth, From Product Creation to Service

WHITE PAPER

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EXECUTIVE SUMMARY

This IDC Manufacturing Insights White Paper summarizes the critical challenges the industrial equipment industry faces today and outlines the dramatic changes the industry will encounter going forward.

The paper highlights how today's fast-paced business environment calls for industrial equipment manufacturers to increase the speed of decision making along the entire product life cycle, from concept to design, from engineering to manufacturing and to service.

IDC Manufacturing Insights suggests industrial equipment organizations modernize their IT landscape to speed up decision making, streamline business processes, and break organizational silos. To do so firms will have to create a unique platform that — supporting the entire product life-cycle process, end to end — offers a single data source from product creation to service.

SITUATION OVERVIEW

The industrial equipment industry is a capital-intensive and cyclical sector that tends to be severely hit by downturns when there is a significant contraction in capital expenditure. Today's difficult economic conditions — with many major economies in recession — are significantly impacting the industrial equipment industry as the majority of clients are adopting a wait-and-see approach and are essentially reining in capital expenditure.

The industry's performance over the past 10 years is shown in Figure 1, which presents IDC Manufacturing Insights' benchmarking database GPI (Global Performance Index). Data shows that the industry recovered quickly after the slump in net profit margins caused by the 2008/2009 crisis, and that in the past couple of years net profit margins declined again and revenue growth slowed down.

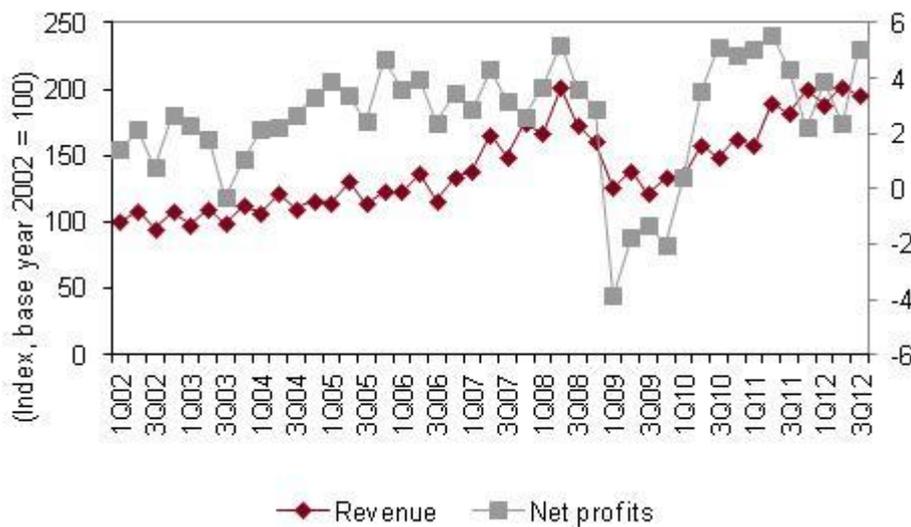
In 2013, industrial equipment manufacturers are expected to undertake initiatives to react to this worsening business outlook. Industrial equipment companies will need to do more with less to maintain a good level of profitability. To this end, mere cost cutting is no longer enough. Cutting costs has been a priority over the past few years,

making it difficult to find new areas to cut. What's left is to find new areas to make productivity gains.

The trend toward greater productivity is clearly emerging in our conversations with leading industrial equipment manufacturers. They are ready to launch transformational initiatives focused particularly on optimizing and streamlining their most critical business process of product life cycle. This process is the backbone of any industrial equipment organization and optimizing it will rapidly bring significant productivity gains.

FIGURE 1

EMEA Industrial Machinery and Equipment Revenue and Net Profit Trends, 1Q02–3Q12



Note: The IDC Manufacturing Insights Global Performance Index (GPI) tracks growth metrics from 800+ publicly traded global firms in the manufacturing and retail industries. The GPI tracks general trends in manufacturing and retail subindustries based on the performance of a sample of companies from those subindustries. Historical data in the index may be adjusted between quarters based on the addition or subtraction of companies in the index or company restatements of historical filings. Estimates by Reuters.

Source: IDC Manufacturing Insights' Global Performance Index, 2013

Major Industry Challenges

In their quest for increased productivity along the product life cycle process, industrial equipment companies will need to tackle a number of challenges, including:

- **Effectively managing global organizations.** Many industrial equipment companies have taken advantage of past crises to expand into new and emerging markets. Many have disruptively grown by acquisition. Although this was an essential strategy to

create a sustainable business in today's global marketplace, it also created a proliferation of engineering and production centers worldwide, resulting in slow, complicated, and inefficient organizations. In particular, this expansion impacted the effectiveness and efficiency of the product life-cycle process. Industrial equipment manufacturers need to find ways to integrate newly acquired companies quickly, including the difficult task of standardizing part number coding across different divisions and functional groups.

- **Increasing product complexity.** The industry manufactures complex, low-volume/high-mix products. The bill of materials is extensive, manufacturing routings are circuitous, and components are sourced from multiple suppliers located throughout the world. The sector has benefited from the explosion in new technologies embedded into equipment, such as electrical, motion control, and automation applications, more sophisticated sensors, and closed-loop electronics. If this helped companies sustain a robust innovation cycle, it also increased product complexity. Companies need to simultaneously manage heterogeneous component families — such as mechanics, electronics, and software — with very different life-cycle dynamics and lead times. Increasing complexity also drives the need to develop more digital prototypes to cross-assess mechanical functionalities, electronics schematics, and software behavior.
- **Rapidly fulfilling diverse customer needs.** Industrial equipment companies serve their clients through make-to-order (MTO) or engineering-to-order (ETO) production models. Customer orders are typically organized around customer contract specifications. Basically no request is fully standard and the number of common parts is often limited, making profitability an ongoing issue. In this respect, competitive differentiation is played on developing modular product strategies, speeding up order configuration and quote, and reducing time to market. In the modern industrial equipment industry, time to market no longer refers to merely single equipment production and delivery, but extends to complete production line installation, making the case for profitable order-to-cash a challenge.
- **Effectively managing after-sale services.** Capital investment has continuously declined over the past few years as buyers have favored the lower risk of equipment rental rather than riskier capital expenditure. In this context, product features — such as functions, quality, and design — offer no more assurance of lasting competitive advantage if not accompanied by a bunch of service capabilities. This has led industrial equipment companies into a complete shift in their strategic focus from product to services. In order to capitalize on the services opportunity, however, manufacturers need to put in place new organizational structures, processes, and tools that support services-based business models that significantly differ from traditional industrial equipment business practices. For example, industrial equipment companies

need to deliver — at a worldwide level — the right spare part, to the right place, and at the right time, and to profitably manage 24 x 7 service operations.

- **Designing for serviceability.** The way equipment is designed and engineered has a significant impact on service effectiveness and efficiency and total cost of ownership (TCO). For example, overcomplicated equipment that doesn't lend itself to easy inspection and dismounting will require extra effort and cost to be properly serviced, putting the overall service profitability at risk. The correlation between good design, engineering, and maintenance costs is well recognized by leading manufacturers that are progressively following the "design for serviceability" principle.

FUTURE OUTLOOK

The product life-cycle process is the most important process for industrial equipment manufacturers. An effective end-to-end process — from concept to design, from engineering to manufacturing and to service — determines the success of the entire organization.

Despite its importance, most companies in the sector still lack a modern, defined process, which in today's marketplace needs to be collaborative and open to multiple functional groups. For modern, organized industrial equipment companies, this process needs to comprise a vast array of activities spanning different organizational groups, including engineering, marketing, supply chain, operations, and service departments. However, in most companies today these functions are not integrated and companies still have separate organizational silos. Information silos are still a reality as well. It is still common, for example, to have the coexistence of multiple part number coding.

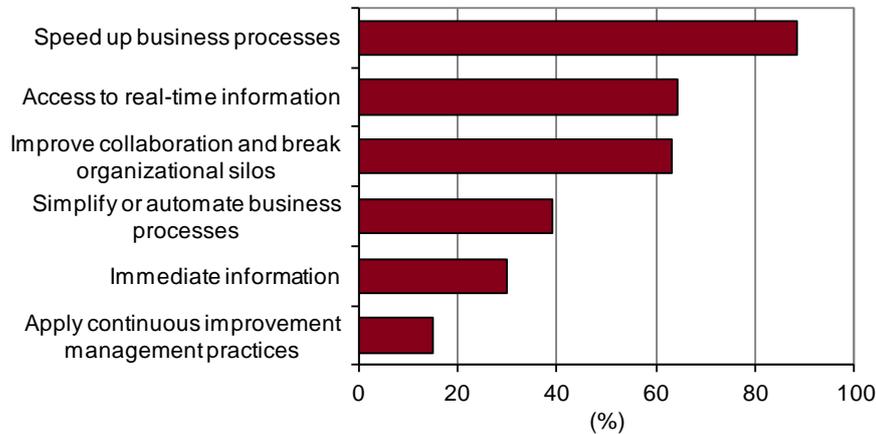
This organizational and information complexity extends the product life-cycle process and makes it more costly, making it less effective and less efficient. As a consequence, industrial equipment companies are unable to address the key challenges discussed earlier. For example, many firms can't easily integrate newly acquired organizations. They can't effectively manage the growing complexity of the bill of materials and routing. They are struggling to manage services and are inefficient in their time to quote.

Our research suggests that achieving a faster decision-making capability is an essential prerequisite to improving the effectiveness and efficiency of the product life-cycle process. Industrial equipment manufacturers acknowledge the business risk of having poor decision-making capability along the product life cycle and are keen to implement a number of enabling initiatives, including speeding up business processes, giving employees access to real-time information, and improving collaboration and breaking organizational silos (see Figure 2).

FIGURE 2

Decision-Making Capability Improvement Areas

Q. *In your opinion, what could be done to improve your decision-making capability?*



Number of valid respondents: 87

Source: IDC Manufacturing Insights, 2013

The Importance of Creating a Unique Platform

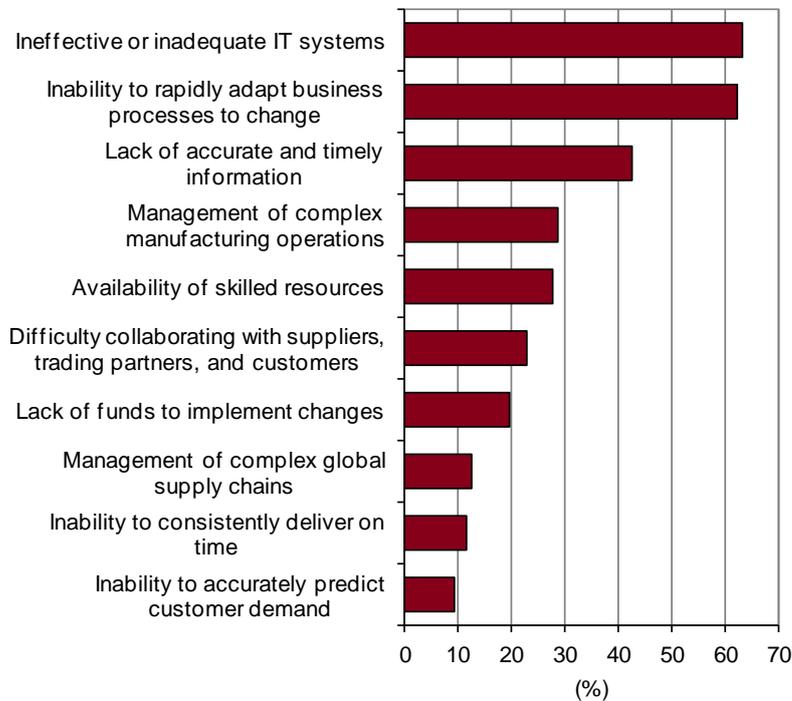
A recent IDC Manufacturing Insights survey found that more than 60% of industrial machinery respondents feel the IT systems they have in place today are ineffective or inadequate when it comes to supporting business excellence (see Figure 3). Firms also believe IT does not support the business well in rapidly adapting business processes to change and feel they lack accurate and timely information they need to quickly make informed decisions. Our research suggests that the primary reason for this is that information is being stored in too many different IT systems that are poorly integrated or not integrated at all.

Industrial equipment organizations recognize that they have to modernize their current IT systems if they want to overcome the most critical business challenges through faster decision making. This challenge is particularly evident in the IT systems used to support the product life-cycle process — industrial equipment manufacturers acknowledge that they need to overcome the current system fragmentation and encourage a more collaborative environment with greater visibility and intelligence of information.

FIGURE 3

Barriers to Improving Business Excellence

Q. *What are the main barriers to improving business excellence that your organization has identified?*



Number of valid respondents: 87

Source: IDC Manufacturing Insights, 2013

To achieve this, industrial equipment manufacturers will have to create a unique platform that offers a single data source for product creation and change throughout the whole product life cycle. This platform will have to support a customer-driven approach to the product life-cycle process in globally integrated organizations. It will have to provide companies with a singular, closed-loop management of product concept, design, engineering, manufacturing, and service.

This platform will have to be a real-time, collaborative decision-making environment that is able to orchestrate the entire product life-cycle process across a number of different organizational functions. Through the platform, companies will have access to a common set of product-related data that will represent the "single version of the truth." The platform will be an essential enabler for productivity along the product life cycle and will offer a solution to a number of business challenges. Business benefits will include easier integration of newly acquired organizations, a faster order-to-quote process thanks to the collaborative contribution of several business functions, and more effective after-sales service capability. Industrial equipment manufacturers will look at this platform to fully standardize part number coding, the bill of materials, and routings.

ESSENTIAL GUIDANCE

The industrial equipment industry is currently in a phase of profound transformation, with companies redefining their business models from product to service. This is happening in the context of today's difficult economic conditions, which are heavily impacting the industrial equipment industry, with a significant contraction in capital expenditure.

To cope with the current difficult business conditions and to tackle the challenges in the market, industrial equipment manufacturers need to improve the effectiveness and efficiency of the product life-cycle process — a key finding of this white paper. This process is in fact the backbone of any industrial equipment organization, and optimizing it will rapidly bring significant productivity gains.

IDC Manufacturing Insights offers the following advice to industrial equipment manufacturers:

- **Modernize your product life-cycle process.** Most industrial equipment companies still lack a modern, defined product life-cycle process. In today's marketplace your product life-cycle process needs to be end to end (from concept to design, from engineering to manufacturing and to service), collaborative, and open to multiple functional groups.
- **Find new productivity gains in the product life-cycle process.** Analyze your product life-cycle process to identify areas of productivity improvements. The majority of companies will have to implement initiatives to speed up business processes, give employees access to real-time information, and improve collaboration and break organizational silos. The end goal will be to speed up your decision-making capability.
- **Achieve a single version of the truth.** To support the transformation of the product life-cycle process, you will have to create a platform that offers a single data source for product creation and change throughout the whole product life cycle. This platform will serve the entire business as the single version of the truth.

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