

WHITE PAPER

'The Hidden Costs of a Forgotten Business System'

Product, Part and Pricing Information Management

Abstract

When pressed to consider how Product Information is managed and used in a corporation, it is not uncommon for business executives to view these words merely as a set of vague, disjointed activities that take place somewhere, somehow, within the organization. Whether they know it or not, product, part and pricing information management, is a business system that supports the creation and delivery of value to a company's customers, and revenue and profit optimization to the corporation. Like ERP, CRM, MRP or other corporate systems, product, part and pricing information management can produce many opportunities and yield very significant benefits to those organizations who acknowledge it – or it can severely punish those who do not.

So why haven't more executives heard of Product Information Management (PIM)? The primary reason is that product, part and price information transcends multiple functional disciplines and effectively 'flies below the radar' of management. Sadly, this 'missing link' is sorely misunderstood, gets mistaken for other processes which may or may not address the full range of issues, and falls through the cracks, resulting in significant margin erosion, revenue leakage and taxation of customer goodwill. Think of it as akin to those 'decimal rounding' practices that put millions of dollars into someone else's bank account. It is only when companies 'do the math' that they realize the real impact a PIM system can have on its financial and commercial success.

Choosing to implement a Product Information Management system leads to a choice of deployment strategies including: extending the functionality of one or more existing systems, developing a new system from within the IT department, or purchasing a commercial off-the-shelf software solution.

This paper discusses the scope of Product Information Management, its implications for the company, and outlines a series of approaches for deploying PIM systems.

Product Information Management in the Manufacturing Environment

Every manufacturing company is in the business of delivering value to customers for the purpose of making a profit. Most manufacturing operations are well disciplined in analyzing production processes, optimizing fixed and variable cost relationships to maximize profit, balancing customer service and warranty practices with their corresponding overheads, and deploying technologies to support all of these objectives. A myriad of custom and commercial systems, including ERP, CRM, MRP and others exist for these purposes.

An interesting phenomenon exists in the manufacturing environment. Amidst mid- to large-manufacturers, there are a series of business activities that frequently ‘fly below the radar’ and are not recognized as discrete business systems. These are the **after sales and service activities** which not only support the manufacturer’s product lifecycle, they are, in their own rite, a significant source of revenue, and a greater-than-average contributor to profit margins. *Moreover, dealing with aftermarket needs is often one of the most significant factors influencing dealers’ preference or non-preference to aggressively and confidently promote repeat and further new original equipment sales.* The system to support these activities remains transparent largely because it transcends functional departments. No single business unit or functional group necessarily sees the entire picture and therefore does not appreciate the real impact of – or the absence of – a system. *Product, part and pricing information management* is, in fact, a discrete and often ‘stand-alone’ system similar to human resources, IT, and other corporate activities in that, it is a set of support processes that have multiple touch points across the entire corporate value chain. However, while IS applications exist to support HR, IT and other corporate activities, we do not see many integrated PIM systems to support after sales service. This phenomenon costs companies dearly, in the form of accumulated hidden costs, revenue leakage and sub-optimal, and often damaging, customer service.

When viewed as a system, product, part and pricing information management is the systematized management of all the individual data points and business processes that support a company’s product information across the value chain.

In Michael Porter’s¹ leading 1985 analysis of value chain within manufacturing environments, there are essentially five elements or process areas that have the most significant impacts on margins. These are: Inbound Logistics, Operations, Outbound Logistics, Marketing & Sales and Service. Although systems dedicated specifically to PIM were not available until fairly recently, there can be no doubt that PIM activities relate to and influence each and every one of those key elements, and therefore warrant focused attention. Using Porter’s generic value chain model, the case is made that PIM activities are exhibited across the entire value chain.

¹ Michael Porter, [Competitive Advantage](#) (1985)

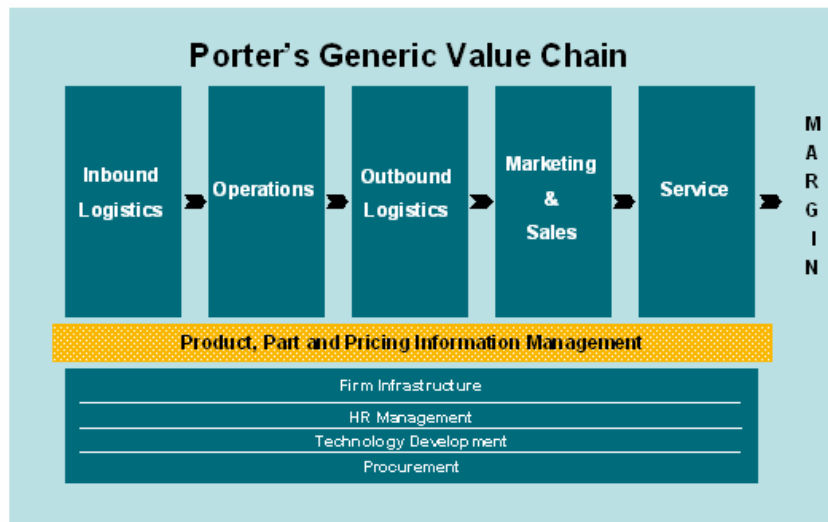


Figure 1 - Porter's Value Chain Model

According to Porter, *Inbound logistics* refers to the input activities associated with raw materials. From a PIM perspective, this would include capturing, analyzing and negotiating supplier parts information and costs, and cross-referencing customer part numbers with internal manufacturing part numbers. Supplier data typically exists in engineering PDM Systems, and in the Material Master, but often resides in isolation of other systems in the value chain, and does not contain all the data necessary to support Marketing, Sales and After Sales Service activities.

Operations are the essential activities an organization performs to create value. Product development and manufacturing are key activities that PIM systems support in terms of managing hierarchical product/part relationships, tracking serial numbers and supersession history, producing 'raw data' for operating manuals, product catalogs, etc. and tracking unit costs, for the purpose of optimizing margins.

In *Outbound Logistics*, PIM plays a key role in managing SKU information, such as cross-referencing customer part numbers with internal manufacturing part numbers, labeling and shipping dimension information, and tracking historical data such as part purchasing patterns, for forecasting sales and distribution volumes and optimizing warehousing and stocking efficiencies.

Marketing & Sales depend on PIM support particularly for production of product catalogs, efficient and dynamic web site content, revenue acquisition activities such as quotation management and promotions, and generation and management of pricing and price lists across multiple sales channels, markets, currencies and languages. Sales also takes into account after sales service parts, as described in Customer Service activities, below.

Finally, PIM plays a key role in *Customer Service* in the form of product information, service procedures and parts manuals, and after sales service. In the latter case, distributors, retailers and end-customers must interpret and source the correct service parts for an in-service product, based on the availability and accuracy of the parts information generated by the PIM system.

Corporations understand that strategic market advantage is gained by driving out costs or differentiating core competencies from competitors in the marketplace. Business systems such as warehouse systems, ERP and MRP systems aim to accomplish one of the two. While these systems create visibility for efficiency and productivity gains in a number of key performance areas, they do little to create ‘strategic visibility’ nor a ‘cohesive strategy’ for developing a **disciplined preference** to do business with the company. *Without a formalized product, part, and pricing information process, organizations run the risk of maintaining disjointed, potentially contradictory and misleading information by which to manage their core business, and to communicate with their customers.* Effectively, the lack of a PIM strategy and system becomes the ‘weakest link’ in a set of efficient business systems and leaves cracks in an otherwise solid foundation.

What falls through the cracks when a PIM system is missing?

Product information management needs to be approached as a stand-alone but holistic system. When product, part, and pricing is not managed as a comprehensive business system, organizations expose themselves to – and inevitably experience - missed revenue opportunities, unnecessary margin erosion and sub-optimal customer service which can lead to serious erosion of customer goodwill. Although not an exhaustive list, the following examples illustrate how this occurs.

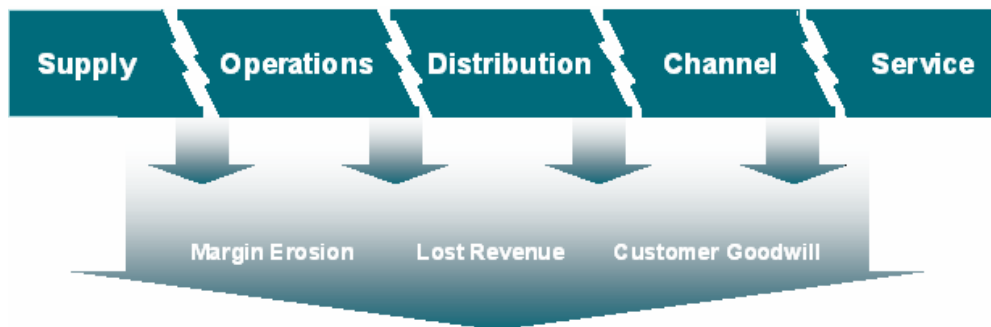


Figure 2 - Absence of a PIM system causes sound business operations to fall through the cracks.

Margin Erosion

Managers may not immediately recognize it as margin erosion, if clear visibility to the *real* costs of manufactured products is not available. (Such lack of visibility is also an issue unto itself with broader implications as well.) A recent study by the Center for Automotive Research² revealed that on average, there exists a 25% variance between estimated and actual costs in bid costing models. In other words, there is a 25% spread of what the costs may actually be. Unless a bid builds that sort of buffer into the pricing, there is a real risk the bid provides less than optimal margins and may even be a losing proposition. Alternatively, building in excessive margin protection risks rendering the bid too high, and thus being priced out of the running. According

² Center for Automotive Research, [Automotive Suppliers and the Revenue Acquisition Process: What’s Working, and What’s Not?](#) (2002)

to the study, although large volumes of useful data exist within the organization, visibility to that data, by those who need it, does not exist. Cost analysis is therefore performed blindfolded.

Similarly, visibility into supplier price changes goes unnoticed more often than assumed. Large manufacturers in particular are vulnerable to thousands of supplier price changes that go by unnoticed because, again, they fly below the radar. Small incremental price changes may be overlooked, and low-volume parts or smaller suppliers may all go unnoticed while the price analysts focus on pricing practices of their top suppliers. Such incremental cost changes may seem small and insignificant on an individual basis, but when added up, the total can be surprisingly substantial.

Probably the most transparent factor of margin erosion, however, is the unnecessary labor required when there is no PIM system in place. Human resources are effectively the ‘glue’ that binds and compensates for manual processes. Examples include the manual gathering of product and part information for marketing publications; manually extracting part and pricing information from other corporate systems for the purpose of developing cost models; manually developing price lists that reconcile channel discount policies, or publishing parts catalogs across multiple languages and currencies for global markets. All such manual practices require an army of staff to support. By implementing a formal PIM system, 60-75% of these labor costs can be redeployed to revenue generating activities instead of margin erosion activities.

Lost Revenue

Revenue acquisition in the parts manufacturing environment is heavily based on successful bid management. We have already discussed visibility to cost models but the same study³ further reveals that the average Tier 1 and Tier 2 automotive parts supplier responds to 495 requests for quotations in a year but that only 25% of the bids are actually successful. When labor rates and time spent on lost opportunities are factored in, the average amount spent on preparing losing bids by the large companies in the sector is \$8.25 million per year. Enhanced PIM intelligence enables: a) much improved assessment of which bids have a higher probability of winning, and are thus worth investing the required resources to develop a response, and b) informed determination of what the optimal bid price should be to increase the probability of a win, while still bidding on a profitable basis. This sounds entirely logical, but the sad truth, as evidenced clearly in the CAR Research Study, is that most bid responses for contracted manufacturing are devoid of solid product information business intelligence. What is missing in the intelligence is accurate product cost information at the granular part level, historical win/loss/profit information, sufficient what-if scenario planning and visibility into the impact of part substitution alternatives.

As noted above, the CAR Research Study revealed a 25% success rate among Tier 1 and Tier 2 automotive parts suppliers. It should be noted, however, that this percentage was derived only from those requests on which bids were actually submitted. Perhaps an even more meaningful discovery of the study was the enormous revenue lost due to otherwise suitable bidding opportunities which are missed entirely, or are disqualified due to lateness. According to that study, among the larger suppliers, late bids alone accounted for over \$3.5 billion of missed sales opportunities in the USA alone. Bids disqualified due to missed deadlines, represent an average of 24% of all bids submitted and are therefore almost equal to those won. Even more significantly, they account for nearly one third of all of the bids submitted but not won. The average cost of preparing such bids among this industry group was \$8.2k on re-quotes and

³ Center for Automotive Research, [Automotive Suppliers and the Revenue Acquisition Process: What’s Working, and What’s Not?](#) (2002)

ECN's, and a whopping \$61.4k on new business RFQ's. These costs were noted as being proportionately lower but equally significant in the case of smaller companies.

While these costs and process inefficiencies have now been thoroughly documented in the automotive sector, other direct industry intelligence suggests that conditions are equally as unsatisfactory and perhaps worse in other 'Quoting/Bidding' segments of the broader manufacturing sector; such as, but not limited to, contract manufacturing in the pharmaceutical and patent medicine sectors. Missing in the cases of greatest reported failure in these respects, is a suitable system platform for coordinating both the basic raw material/supplier cost information, and for coordinating the collaboration of the various players within the organization, to enable effective, profitable and competitive bidding in a timely, manageable and efficient manner. In the distant past, the unavailability of effective, dedicated and holistic systems could allow some justification for inefficiencies of this magnitude, but in recent history this excuse has been precluded.

The same lack of visibility into parts pricing eats away at missed revenues associated with managing price changes to the distribution channel. While distribution channels typically require advance notice of a price change, in truth, getting the changes set and disseminated into the market (supported by product catalog amendments, price lists, etc.) has taken upwards of 5 times longer than is required. In addition, every month that goes by that an upward price change is not in effect is lost 'bottom-line' revenue to the company that will never be recaptured. Companies who have quantified this leakage have reported lost revenue exceeding \$2 million per month. Every month that a downward price change is not in effect, is a month of missed market competitiveness.

Customer Goodwill

The most costly impact, however, of a missing PIM system is the resulting impact on the customer relationship. While the majority of organizations may have implemented CRM systems to improve relationships, errors associated with manual product information management processes can undermine all the positive results of CRM.

In a recent study published by A.T. Kearney⁴, the amount of erroneous catalog data published by manufacturers hovers at around 30%. To the consumer goods industry alone, this represents an aggregate cost of some \$40 billion, in error correction, lost opportunity, and customer service costs.

Simply stated, when you have manual processes requiring human intervention, the error rate is higher. In this case, errors appear in the customer domain as missing or incorrect part and product information, incorrect pricing and inventory information. Whether the customer service remedy involves help-desk support, reshipping of incorrect orders or processing of credit notes, the remedies can never fully repair the damage to the customer relationship and the lost credibility of the organization.

Moreover, when errors are systemic – by virtue of the fact that the system is missing – it doesn't take long for channel partners to seek alternative solutions to avoid disappointing their end-customers. A channel customer will prefer to do business with the supplier who makes it easiest for them to deliver good service to their own customer. Easy delivery of accurate and reliable

⁴ A.T. Kearney, [Action Plan to Accelerate Trading Partner Electronic Collaboration](#) (2002)

product information plays an integral role in cultivating that disciplined preference to do business with one supplier over another.

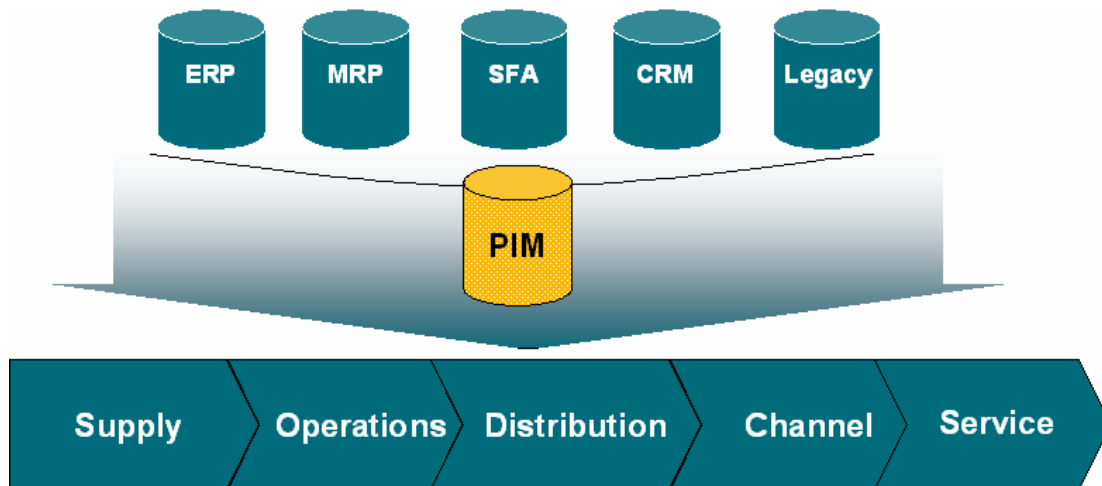


Figure 3 - A Product information management system augments capabilities of business systems and provides a single source of product, part and pricing information across the company.

Alternative Approaches to Implementing a Product Information Management System

Upon recognizing the need for a PIM solution, companies have alternative approaches to implementing one. In this section we briefly review the advantages and disadvantages of either extending existing systems, developing a new PIM system in-house, or choosing a standalone Product Information Management solution.

Option 1 – Extend Functionality of an Existing Business System

For many reasons, extending a business system makes a lot of sense. Oftentimes these systems are implemented through a solution provider who can add on or extend the core technology to meet the functional needs of a PIM system. Assuming an organization is pleased with their past solution vendor and assuming the system itself continues to play a strategic IT role, it would seem to make sense to build on an existing investment. Moreover, it is comforting to already know the vendor you are dealing with. You have a history with them and so you know exactly what to expect.

The drawbacks to going this route center on a few key areas that should be given serious consideration. First, PIM is a distinct business practice and requires an area of expertise that may be outside the current solution provider's core competency. To implement PIM, a solution provider must thoroughly understand the myriad of touch points across the organization and recognize the business implications of certain process decisions and how information would need to be managed. Second, in choosing to extend an existing technology, it is highly probable that current processes, albeit manual, would need to conform to those of the incumbent technology and these may not necessarily be what's best for PIM. Certainly, one could impose existing

processes on a vendor technology but it is well established that implementation costs increase exponentially for every line of code that is modified⁵. Further, as business strategies, sales channels, and markets continue to change, so thus will the requirements to ‘change code’ to suit the changing business model. The net gain of customizing technologies remains highly questionable, from a cost of ownership, time to implement, and overall flexibility perspective.

Option 2 – Grow Your Own

Deciding to ‘grow your own’ product information management system would be highly strategic if the functional elements are so fundamental to differentiating your offering from competitors and you have the opportunity to tightly integrate your information management with other core competencies. Building your own solution will ensure you get exactly what you want and that it conforms exactly to your intended business processes.

However, it comes at a price. Unless the proposed PIM system is deemed to be a mission critical factor to an enterprise strategy, it is likely not the best use of IT resources who continually struggle to support new application development amidst competing strategic and operational budgetary constraints. The McKinsey model of IT management shows only 10-15% of budget is usually available to new projects that would generate business value. In all likelihood undertaking an internal PIM project will not receive the same level of support as other IT initiatives that are more clearly aligned with the business strategy. Again, time to implement and other cost of ownership factors must be taken into account.

Option 3 – Standalone PIM System

In many ways, a standalone product information management system mirrors the attractions of the previously noted alternatives, without the inherent cost or risk. First, a standalone system would exist between other systems, leveraging the strengths and capabilities of these systems while consolidating all disparate data into one single source. Second, a true standalone system means it is off-the-shelf and can be implemented quickly. The technology would already be proven and would typically cost considerably less than a custom implementation. Third, a good standalone system would conform to existing business processes causing minimal disruption and change to those processes, but achieving all the benefits of automation. Finally, a standalone system would be able to adapt to changing business strategies and thus processes, without disrupting or requiring adaptation or changes to other business systems.

Key areas to be cautious of include the nature and type of product information which an off-the-shelf system manages. Content management systems and other types of sell-chain solutions do not provide all the components to satisfy a PIM strategy. A comprehensive Product Information Management system includes the ability to manage all aspects – catalog management and cross-media publishing; pricing and costing management; product hierarchy management, as well as granular product and customer data attributes, audit trails and full reporting. Its inherent strengths should also be apparent, inasmuch as it should be able to provide a ‘single source of the truth’, from which all product information flows.

Another area of concern should be the extensibility of the product information management system. Open, published application programming interfaces, using standard and not proprietary protocols are very important to open interchange between applications. Similarly, a standalone PIM system would need to be flexible enough to accommodate the multitude of data types, sources and formats inside and outside of the corporation, and would adopt current and legacy

⁵ Laudon & Laudon, Essentials of Management Information Systems (2001)

e-Commerce standards (EDI and XML). Find out if the technology contemplated is customized to a vertical industry segment, or if it is a 'generic', cross-industry platform.

What are the information delivery mechanisms, and what do they enable? When dealing with a product information management strategy, verify that the platform you are contemplating has a collaborative environment for internal and external users, including the sales channel. A product information management system without a solid e-Catalog leaves you vulnerable to multi-vendor incompatibility. Conversely, ensure that the product information management platform is cross compatible with other e-Catalog formats, to ensure the highest opportunity for interoperability amongst all your trading partners. While paper is rapidly becoming a thing of the past, there is still downstream demand for 'print-ready' formats, and a comprehensive PIM solution should support cross-media publishing. Finally, if you are working with a new technology vendor, it goes without saying that past successes with other customers should be a pivotal consideration, not only for the merit of the solution provider, but also for the strategies deployed and how swiftly the customer was able to implement.

Conclusion

It is unfortunate and unnecessary for organizations to continue leaving money and customer goodwill on the table. IT departments and their business units need to closely examine and quantify to what degree the absence of a PIM system impacts their company and explore all the alternatives outlined in this document before making a decision.

Product Information Management systems are no longer 'pie-in-the-sky' designs on paper or whiteboards. Many early adopters have successfully implemented, and have gained considerable competitive advantage in establishing integrated, end-to-end sales and product support systems. In a real sense, PIM systems provide the 'missing link' to effective customer and partner relationship management strategies, a number of key revenue processes, and true e-Commerce and e-Business enablement. The relative investment in off-the-shelf software is modest, the risk is low and the returns are enormous. Companies who have implemented PIM strategies continue to benefit from significantly quicker 'time to market', with higher information accuracy, through greater collaboration and visibility across the organization. This results in lower costs to transact business, higher customer retention, lower customer service costs, greater ability to act on revenue acquisition opportunities in quoting and bidding, and the building of disciplined preferences with suppliers, the selling chain and customers.

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