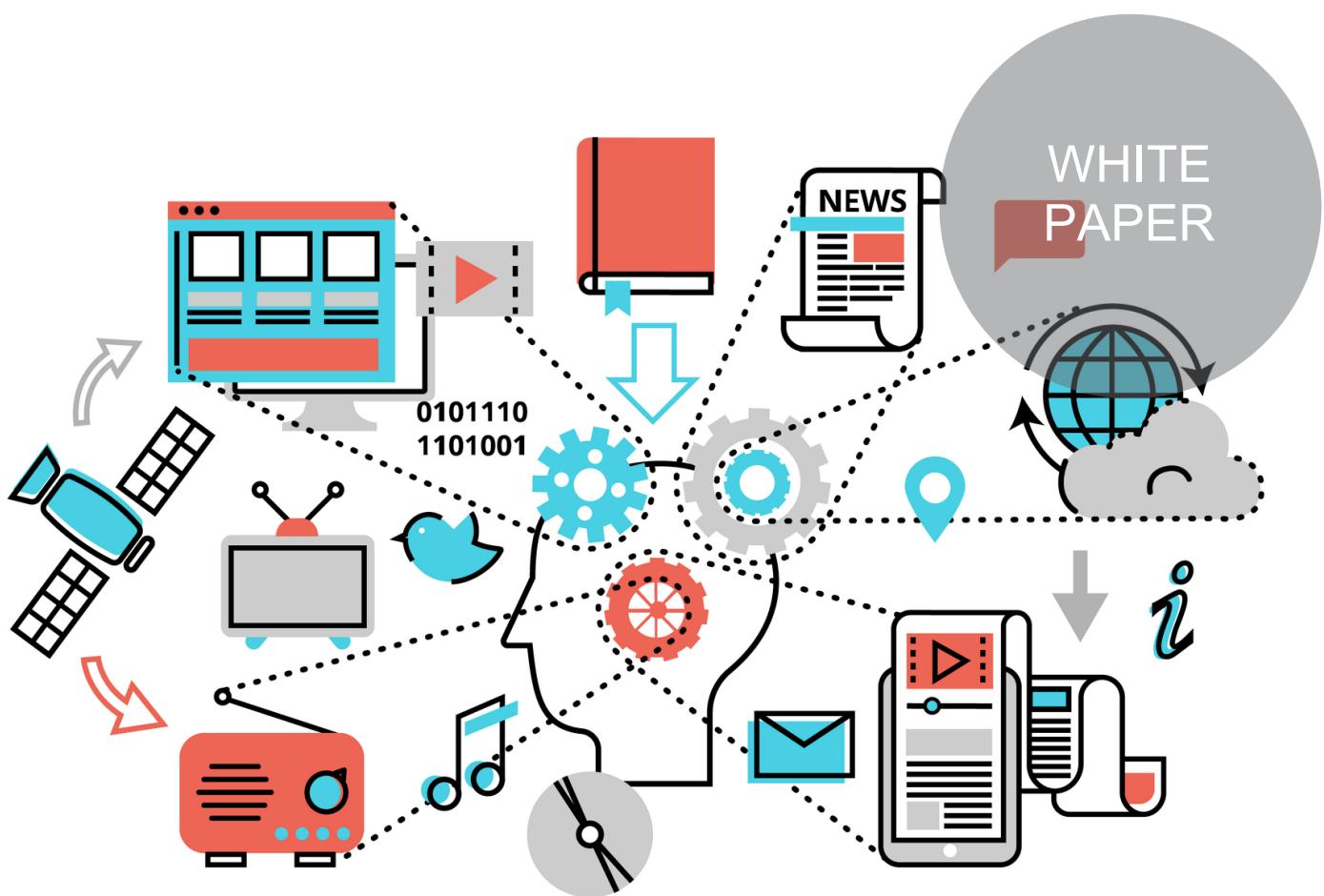


The Next Generation of Product Information Management

Maximizing the Potential Value of Products
for Customers and Suppliers



VENTANA RESEARCH



A Note About This Research

April 2017

Ventana Research performed this research to determine attitudes toward and utilization of product information management. This document is based on our research and analysis of information provided by organizations that we deemed qualified to participate in this benchmark research.

This research was designed to investigate product information management systems, practices, needs and potential benefits. It is not intended for use outside of this context and does not imply that organizations are guaranteed success by relying on these results to improve product information management. Moreover, gaining the most benefit from a product information management system requires an assessment of your organization's unique needs to identify gaps and priorities for improvement.

The full report with detailed analysis is available for purchase. We can provide detailed insights on this benchmark research and advice on its relevance through the Ventana On-Demand research and advisory service. Assessment Services based on this benchmark research also are available.

We certify that Ventana Research wrote and edited this report independently, that the analysis contained herein is a faithful representation of our evaluation based on our experience with and knowledge of product information and systems to manage it, and that the analysis and conclusions are entirely our own.



VENTANA RESEARCH

Bend, Oregon, USA

541-940-1010

info@ventanaresearch.com



Table of Contents

Executive Summary	4
Key Insights	9
PIM requires an assessment of priorities.....	9
PIM is necessary for effective digital commerce.....	10
Organizations lack trust in and satisfaction with product information.....	11
Technology and data issues impact business use of product information.....	12
PIM and MDM should work together.....	13
Ineffective technology impedes product information processes.....	15
Integrating and managing data is essential to PIM.....	16
Standardizing product information benefits business.....	17
PIM software serves many roles in the organization.....	19
It is critical to establish plans for PIM.....	19
10 Best Practice Recommendations	23
Engage a range of roles in creating and using consistent product information.	23
Find a reliable way to standardize product information.	23
Instill trust and confidence in your product information.	23
Use PIM in digital commerce to improve the customer experience.	24
Identify and resolve technology and data issues.	24
Integrate the use of PIM and MDM.....	24
Eliminate the use of spreadsheets in product information management.....	24
Evaluate tools for integrating the variety of product data.....	25
Establish ongoing plans for managing product information.....	25
Assess technologies that can enhance your efforts.....	25
About Ventana Research.....	26
Appendix: About This Benchmark Research	27
Methodology	27
Qualification	27
Demographics.....	28
Company Size by Workforce	28
Company Size by Annual Revenue	29
Geographic Distribution.....	29
Industry	30
Job Title	30
Role by Functional Area.....	31

Executive Summary

Consistent, accurate and actionable product information is essential to the smooth-running, successful business. To be able to provide this information as needed for consumers, customers and partners as well as throughout the supply chain, organizations must ensure the processes they use to develop and disseminate product information satisfy their needs for efficiency and effectiveness.

“

If product information is not managed properly, the result may be a bad product experience that decreases customer satisfaction.

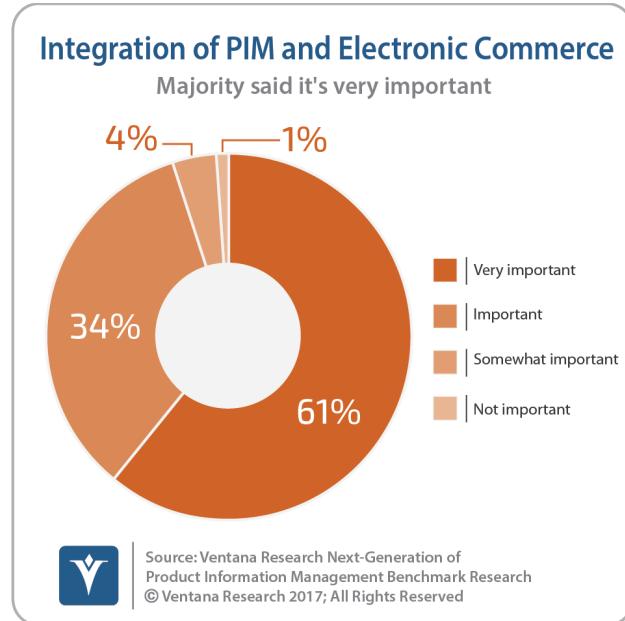
Using product information can be a difficult management challenge as industries, companies and even groups within them frequently use different names and attributes for the same products. Disparities often can exist across different functions within the same organization, so that marketing, sales, commerce, the supply chain and finance each stores product data differently. Technological advances also challenge the consistency of product information. For example, many customers expect to be able to carry out product-related searches and transactions on their mobile devices, and e-commerce poses its own set of challenges for referring to a product for a purchase or recommendation. And, of course, product content today includes images and video linked

to social ratings and comments. If product information is not managed or used properly, the result may be a bad product experience that ultimately will decrease customer satisfaction.

Overcoming these varied challenges requires unified processes and automated systems. Well-performing organizations embrace product processes that use product information management (PIM) software to handle content and data about products, items or materials across the enterprise and for digital commerce to support supplier networks and business-to-business (B2B) exchanges along with business-to-customer (B2C) commerce.

Ventana Research undertook this benchmark research to determine the attitudes, requirements and future plans of those who use product information management systems and to identify the best practices of organizations that use it successfully. We set out to examine both the commonalities and the qualities specific to major industry sectors and across sizes of organizations. We considered how organizations perform product information management, issues they encounter in the process and how their use of PIM and related technology is evolving.

The research underscores the repeated finding that this topic touches all segments with which companies do business. Substantial percentages of participants said that the activities important to their organization's product information management efforts are business-to-business interactions (77%), electronic commerce of products and services (62%), consumer access to product information on the Web and mobile devices (55%) and sharing of product-related information with suppliers (46%). About one-third of organizations said it is very important for service fulfillment specialists, suppliers, retail customers, distributors and channel resellers to participate in their product information management processes. Three out of five said it is very important to integrate product information management with electronic commerce, though as yet only about half have done that. And the research indicates that businesses that don't integrate PIM with e-commerce risk creating issues in delivering products and services electronically.



Despite the evidence of a widespread need for product information, the research finds unease about it. Most participants said they largely trust their product information processes, but far fewer said they completely trust them – internally (16%), for B2B purposes (18%) and for business-to-consumer (B2C) product information management processes (23%). We find a similar distribution for those who said they are confident (50%) in the quality of their product information and those who said they're very confident in it (11%).

This lack of enthusiasm arises for a variety of reasons. For both B2B and B2C, research participants identified as the most common barriers to creating a single version of B2B product information the use of incompatible tools, the existence of disparate forms of data and multiple systems in which they're stored, and the lack of a centralized information repository and adequate data governance policies. We believe these issues can be dealt with through the use of systematic processes supported by technology designed to manage this type of information.

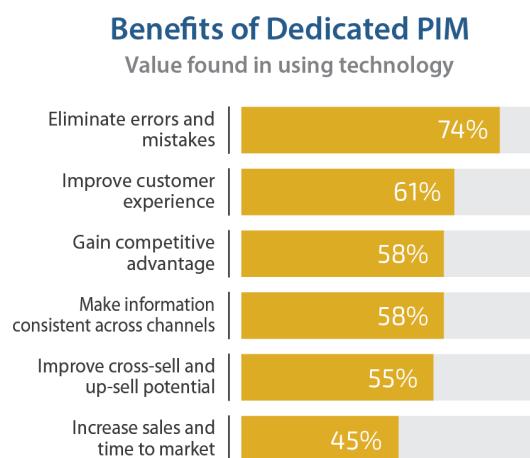
However, the research shows that fewer than three in 10 organizations, only 28 percent, use a dedicated product information management application. More rely on manual effort (48%), spreadsheets (38%), database-related software (36%), ERP applications (35%) and custom-coded applications (32%). It is easy to understand how this heterogeneous array of tools, more than one of which may be used across any given company or a supply chain, can lead to incompatibility and multiple disparate versions of data, and that it undermines

the goal of producing a single, complete, consistent and reliable record for each product.

Where there are multiple systems that contain product data, the issue of managing them also poses substantial problems for companies. A majority (56%) of organizations in this research have more than five systems that contain product data; half of them have 11 or more. To create a single, consistent product record in such an environment, all the relevant data must be integrated, but at the moment only one in 10 companies say they can synchronize data from all sources. Nevertheless, the importance of doing this is recognized: Much the largest percentage (39%) of participants ranked data integration first or second in importance among technologies they use to create a complete, consistent and reliable product record.

A step that facilitates the creation of reliable product records is to establish a consistent, single source of product information, which enables organizations to standardize data. Only one-third of organizations say they have a system that provides such a single source, and three-fifths said it requires significant (44%) or substantial (16%) effort to standardize product information into a complete, consistent and reliable form. Only 5 percent said doing so is not a problem. Participants often said they have trouble with a number of issues: identifying incomplete product attributes; canceling, discontinuing or deleting products;

managing conflict in product content; and managing new product introductions. These are core aspects of product information, and unless they are handled competently, business problems are likely to result.



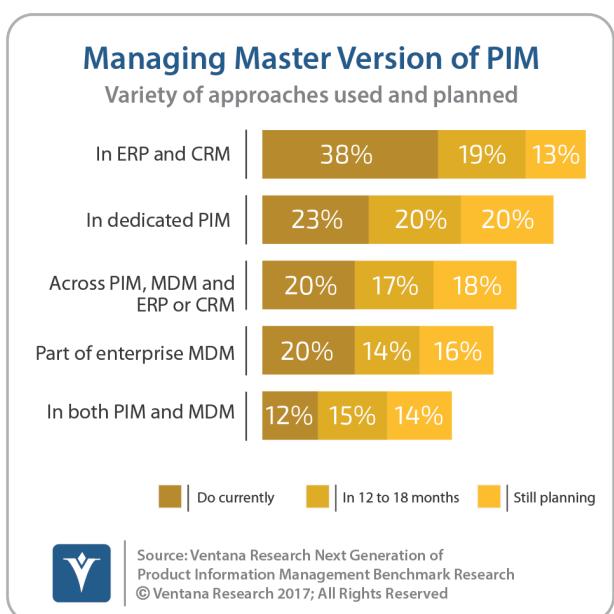
Source: Ventana Research Next Generation of
Product Information Management Benchmark Research
© Ventana Research 2017; All Rights Reserved

Dedicated product information management software is designed to address such fundamental requirements. The most widely mentioned benefit of using it, cited by three-fourths of organizations, is to eliminate errors and mistakes in product information. More than half (58%) said that dedicated PIM software can make product information available in a consistent manner across channels. The

other top three benefits cited are business rather than operational benefits: improving the customer experience, gaining competitive advantage through faster time to market, and improving the cross-sell and up-sell potential of products.

A technology that is independent of product information management but often is used with it is master data management (MDM). Designed to ensure consistent data across enterprise business processes, MDM can be used to manage a master version of product information. This research finds that 20 percent of participating

organizations use it to do this, almost as many as manage a master version in a dedicated PIM environment (23%) and the same percentage as manage it across PIM, MDM and ERP or CRM applications. Having a product data master can facilitate the creation of product records. While about half of organizations have an MDM system, only 16 percent have integrated it with PIM; not doing that is likely to constrain their usefulness. Among organizations that have MDM integrated with PIM, almost three times the percentage (48%) said they are satisfied with their product information management efforts than was the case for those that have not integrated the two (18%). Likewise those that have integrated MDM and PIM are more often satisfied with the results of their process for creating a product record (75%) than those that have not integrated them (42%). Clearly there is value in using the two together, but so far it is not widely done.



As noted earlier, product information management impacts stakeholders beyond the enterprise, including customers, partners, suppliers and distributors. Within the organization It also affects an array of functions: marketing, sales, customer service, operations, the supply chain and finance. Thus, its importance to business is undeniable. As the types of product data, including unstructured ones, increase along with the sheer volume of data about sales, purchasing habits and customer sentiment and satisfaction, effective PIM is certain to remain a challenge.

In the face of this variety of impediments to ensuring that product information is accurate, trustworthy and readily accessible, many organizations acknowledge that need to get better at managing it. Two in five research participants (41%) said their organization is planning to change the way it manages product information in the next 12 to 18 months. Large and very large ones are planning such a change more often than smaller ones are. Among organizations not satisfied with the results of the process they currently use for creating a product record, an even higher percentage (67%) plan a change.

Managing product information effectively today also requires paying attention to a broader set of technologies. To improve their product information management processes, organizations most often cited as valuable these technologies: analytics (74%), collaboration (51%), big data (47%), mobility (46%) and cloud computing (39%). In addition, more than half (55%) said enabling consumers to access product information on the Web and mobile devices is important. Vendors of advanced PIM systems have taken account of these advances, and we recommend that organizations seeking to improve business processes and relationships



consider products that will help them provide the best possible product experience from the information assets that support it.

Key Insights

This benchmark research yielded the following important general findings and key insights regarding the state of product information management systems. We also compared these research results with those from similar research we conducted in 2012. (We discuss performance levels in the Performance Index portion of the full research report; the actual questions asked in our survey are in an appendix to the research report. Specifics of organization sizes are in the appendix "About This Benchmark Research.")

PIM requires an assessment of priorities.

Product information management (PIM) is designed to manage product

“
Most organizations said they can improve their performance in creating and managing product information.

information across an organization's business processes from the point of creation through utilization. Nearly two-thirds (62%) of the participants in this research said that product information management is very important to their business, while half as many (31%) said it is important. Primary responsibility for PIM most commonly lies with a manager of a product-related area (39%) and/or someone responsible for defining and managing product information (27%). Despite this level of involvement, though, most organizations participating in our research said they can improve their performance in creating and managing product information.

Our Performance Index analysis finds participating organizations distributed evenly across three of the four levels of our performance hierarchy – all but the highest Innovative level. The smallest percentage (15%) rank as Innovative; more than half (58%) rank at the second and third levels; and the remaining 27 percent are at the lowest Tactical level. The research finds that very large organizations with more than 10,000 employees (8%) or more than \$10 billion in annual revenue (3%) reach the Innovative level less often than do large organizations, which have 1,000 to 10,000 employees (19%) or revenue from \$1 billion to \$10 billion (15%). Among industry sectors, Manufacturing tallied a higher percentage of Innovative organizations (16%) than did other industries, a finding that reflects its dependence on product information.

Analysis of the four dimensions into which we segment performance finds a varied pattern of distribution across the performance levels. In the People and Technology dimensions the largest percentages (24% each) of organizations place at the Innovative level, substantially more than is the case for Process (7%) or Information (10%); on the other hand, more than half are at the two lowest levels

in Process (55%) and Information (66%). This finding suggests organizations have particular problems with product information management processes; the correspondingly low Innovative percentages for Process and Information indicate that many of these processes do not perform optimally. That exactly half reach the top two performance levels in Technology and even more (57%) do so in the People dimension indicates that many organizations have empowered their people to manage product information effectively and have supplied them with technologies that support superior performance.

PIM is necessary for effective digital commerce.

“

Collaboration on product information is very important across service fulfillment, suppliers, retail customers, distributors and channel resellers.

Looking at the involvement of various parties in business-to-business (B2B) PIM, the research finds collaboration on product information is very important to about one-third of organizations across service fulfillment, suppliers, retail customers, distributors and channel resellers, and slightly less so for contract manufacturers and wholesalers. It confirms the importance of product information management across roles that depend on product information to run their business processes.

PIM is important beyond simply defining and managing product information. Research participants said that the activities important to their organization's product information management efforts are, in order, business-to-business interactions with product information (77%), electronic commerce of products and

services (62%), consumer access to product information on the Web and mobile devices (55%) and sharing of product-related information with suppliers (46%). Very large organizations by number of employees (83%) and revenue (85%) put B2B interactions first more often than the overall average; so did the manufacturing sector (87%). Very large organizations must cope with more complex value chains of suppliers to distributors to customers, but for them PIM efficiency is essential.

Successful electronic commerce depends on accurate, consistent product information, and thus product information management is important to organizations for which digital commerce is a substantial part of their business activities. In this research three out of five (61%) organizations said it is very important to integrate product information management with electronic commerce, and an additional one-third (34%) said it is important. By industry sector, manufacturing companies (65%) most often said such integration is very important. However, further analysis reveals that only half of organizations currently integrate the two; an additional one-quarter (26%) plan to integrate

them within a year. Very few (7%) organizations said they don't plan to integrate PIM and e-commerce.

When asked about their PIM software's ability to support e-commerce, two-thirds (67%) expressed some degree of satisfaction, though only about half of them (32%) said they are unqualifiedly satisfied. One-fourth of the others said they are neither satisfied nor not satisfied (14%) or are not satisfied (12%). Organizations that have integrated product information management with an electronic commerce system said they are satisfied that their PIM system supports e-commerce more than twice as often (50%) as those that only plan to do it (20%). In our view, businesses that don't integrate PIM with e-commerce risk creating issues in delivering products and services electronically and thus issues in customer satisfaction.

“ Businesses that don't integrate PIM with e-commerce risk creating issues in delivering products and services electronically and thus issues in customer satisfaction.

This research finds that responsibility for product information operations and processes most often lies with the IT development and delivery function (51%), followed by product development or engineering (42%) and marketing (40%). This pattern of responsibility is largely unchanged from our research four years ago except that marketing (25% then) is now more often involved. Then as now, many

organizations see product information management as primarily an IT responsibility with some involvement of functions responsible for the creation and marketing of the products themselves.

Organizations lack trust in and satisfaction with product information.

People need to believe that product processes generate reliable information. However, the research finds that most organizations don't completely trust their product information processes. Only 16 percent said they completely trust them, though a majority (65%) said they trust the processes mostly. Very large organizations by employees (9%) and revenue (4%) least often trust their processes completely. Asked specifically about B2B product information management processes, organizations completely trust them only seldom (18%), although a majority (59%) said that they mostly trust these processes. Organizations somewhat more often said they completely trust their business-to-consumer (B2C) product information management processes (23%), and a smaller majority (51%) mostly trust them. In all three instances, 19 to 25 percent said they trust processes only somewhat. In the B2C area complete trust is more common among those with IT titles (27%) than is the case for those in the lines of

business (18%). A lack of trust in key elements of product information can damage morale, and if it is justified, damage the business itself.

In a related series of questions, half of organizations said that they are confident in the quality of their product information. Only a small percentage (11%) said they are very confident, but even fewer said they're not confident (5%). Our analysis finds more confidence among organizations that have integrated PIM and a master data management (MDM, 25%) system than among those that have not integrated them (4%). Similarly, organizations that have a single source of product information said they are very confident (21%) more often than those that do not (5%). And confidence in the quality of product information is highest when organizations rarely or almost never use spreadsheets (38%) or use them only occasionally (31%), compared to the weak confidence of heavy or moderate spreadsheet users (each 5%). We conclude that using technology not designed for PIM can undermine confidence in an organization's commitment to quality product information, while steps that improve efficiency and reliability improve satisfaction as well.

“

The research finds that most organizations are only somewhat satisfied (52%) with their product information management efforts.

The research also finds that most organizations are only somewhat satisfied (52%) with their product information management efforts; just one-quarter (24%) said they are satisfied with them. Very large organizations by employees (17%) and revenue (18%) are satisfied more often than are smaller ones. There has been some progress in the last four years; 5 percent more said they are satisfied now than in the previous research (19%). Notably, satisfaction with product information management efforts is highest (37%) when organizations have dedicated product information management processes and when PIM is used with electronic commerce (49%). Overall, the research frequently finds discomfort with product

information and the processes used to manage it, which ultimately are needed to provide a great product experience.

Technology and data issues impact business use of product information.

The research uncovers a range of barriers to effective business-to-business use of product information management. 40 percent or more participants cited these barriers to achieving a single version of B2B product information: Users have too many incompatible tools; there are too many disparate forms of data; it is too hard to standardize data when using multiple systems; there is no centralized information repository; and there are multiple unsynchronized metadata stores. Our previous research found similar barriers with slightly higher percentages for

each. When we asked the same question focused on business-to-consumer product information, the top five barriers to achieving a single version are slightly different; the most often cited is too many disparate forms of data (52%), followed by too many incompatible tools (48%), lack of a centralized information repository (42%) and of adequate data governance policies (41%), and difficulty in standardizing data when using multiple systems (36%). In both B2B and B2C operations, incompatible tools and disparate forms of data challenge the effectiveness of PIM processes.

“

Organizations that share all of their information are satisfied most often with the process of creating a product record.

Whether it is conducted conventionally or online, business involves sharing product information electronically. Here the research finds room for improvement, as only 5 percent of organizations share all their product data electronically with supply chain partners, though more than half (58%) share some of their data; one-fourth share none of it. Very large companies by employees (77%) and revenue (78%) most often share some of their data. Yet further analysis shows that organizations that share all of their information are satisfied most often with the process of creating a product record (88%). Those that share all of their information also are most often very confident in the quality of the

organization's product information (56%) and most often satisfied (78%) with how the organization shares and distributes product data with supply chain partners. Overall only one-fifth (21%) of organizations are satisfied with how product data is shared with and distributed to supply chain partners. About half (48%) said they are somewhat satisfied, and another one-fifth (21%) said they are neither satisfied nor not satisfied; just 4 percent said they are not satisfied. Very large organizations by employees (68%) and by revenue (67%) are somewhat satisfied more often than other organizations.

Organizations that have integrated master data management and product information management are satisfied far more often (50%) in the sharing and distribution of data than those that have both systems but have not integrated them (6%). Satisfaction is also much more common for those that have a single source of product information (36%) than for those that do not have one (10%). Sharing product data smoothly across the supply chain clearly requires a focus on processes and underlying systems.

PIM and MDM should work together.

Independent of product information management, some organizations use master data management (MDM) technology to ensure consistent data across the enterprise and its business processes. The research finds that almost half of organizations have a master data management system, but few have integrated it

with product information management. Only the smallest percentage (16%) of organizations said they have an MDM system that is integrated with PIM; somewhat more (26%) said they have an MDM system but that it is not integrated with PIM; the largest percentage (47%) do not have MDM. Almost three times as many organizations that have MDM integrated with PIM (48%) said they are satisfied with their product information management efforts than those that have not integrated the two (18%). This is similar to findings that show organizations with PIM systems integrated with their electronic commerce systems more often satisfied (59%) than those without (27%). In addition, those that have integrated MDM and PIM are more often satisfied with the results of their process for creating a product record (75%) than those that don't have both (30%) or those that have MDM and PIM but have not integrated the two (42%). This research finds less adoption of master data management integrated with product information management (16%) than did the research four years ago (28%) and a higher percentage of organizations that do not have MDM at all now (47% vs. 29%). While this finding is somewhat concerning, modern product information management systems include master data management capabilities that can apply to products and in some cases other types of data.

Organizations that currently manage a master version of product information most often do so within ERP and CRM applications (38%); in a dedicated PIM environment (23%); across PIM, MDM and ERP or CRM applications (20%); as part of an enterprise MDM system (also 20%); and least often in both PIM and MDM systems (12%). Those that plan to begin managing a master version of

product information in the next 12 to 18 months most often will do so in a dedicated PIM environment (20%), within ERP and CRM (19%) and across PIM, MDM and ERP or CRM (17%). Managing a master version of product information with advanced technology remains an immature practice. Comparing findings from the previous research with these, it seems likely that some of those that said they would deploy new technology within two years did not do it. While most organizations today are not managing the product information master in a dedicated environment, the new research still finds interest in shifting to a dedicated approach to product information management.

Half of participating organizations said they are not satisfied with how they create a product record; one-third said they are satisfied.

Having product master data can facilitate the creation of product records. The research finds

that half (49%) of participating organizations said they are not satisfied with how they create a product record, compared to one-third (34%) that are satisfied. Executives (64%) most often said they are satisfied; two-thirds (67%) of users, the roles that typically create the records, said they are not satisfied. The extent of satisfaction has decreased since the previous research, in which almost two-

thirds (63%) of all participants said they were satisfied. Satisfaction is twice as common in organizations that have a single source of product information (60%) as in those that do not have a single source (30%).

Organizations rarely are satisfied with the results of the process when they are creating product records using spreadsheets heavily (75%) or moderately (53%) – significantly lower satisfaction levels compared to those that do not use spreadsheets (only 17% of which are not satisfied). Asked about the source of their dissatisfaction with creating product records, organizations said most often that it requires too many resources to perform tasks (70%), is too unreliable (48%) and is too slow (42%). The reasons for dissatisfaction have changed, as in the prior research participants most often said the process was unreliable (71%) and too slow (68%). To a significant extent we attribute dissatisfaction surrounding the creation of product records, particularly when the reason given is because it requires too many resources, to use of technologies not designed for product information management.

Ineffective technology impedes product information processes.

The functional areas most important to organizations' product information

“Fewer than three in 10 organizations (28%) use a dedicated product information management application.

management efforts are the product life cycle (said 67%), product management support (65%), data management (63%), digital asset management (59%), multichannel publishing (51%), print management (40%) and catalog management (39%). Today the information associated with products includes not just text descriptions but also images, video and documents. This research finds multiple ways in which organizations currently try to create a single, complete, consistent and reliable product record. The most common of them, we find, aren't assisted by capable technology: manual effort (48%), spreadsheets (38%), database-related software (36%) and ERP applications (35%). Fewer than three in 10 organizations (28%) use a dedicated product information management application. In the previous research even more organizations relied on manual effort (78%) and spreadsheets (69%) to create a product record, so we see progress in that regard. Ultimately, heavy use of technology not designed for the task has a direct impact on the efficiency of product information processes. Using too many tools, which can create disparate data stores, also makes it difficult to support a consistent version of product information.

The research finds that organizations that do not have a single source of product information most often use spreadsheets heavily (46%); this combination itself undermines consistency and reliability. In contrast, organizations that almost

never use spreadsheets are most often satisfied (40%) with their PIM efforts. Nearly half (47%) of those that use spreadsheets said that they find product-related errors frequently, and for 19 percent some of those errors have a major impact; another one-fourth (23%) occasionally find errors that have major impact. Only 8 percent of organizations that use spreadsheets rarely find errors. Business users (28%) said they find major errors frequently. These results are consistent with those of the prior research. Predictably, organizations that use spreadsheets heavily most often find errors frequently, some major (34%) and some minor (30%). Spreadsheets are not designed for product information management, and there is much opportunity for data to be entered incorrectly or changed accidentally.

“

Very large organizations most often said it is not easy to integrate product information across business lines and systems.

The technologies most often used in the creation of a single complete, consistent and reliable product record are data integration (of data from disparate sources, ranked first most often, by 23%), data quality (cleansing and improving consistency, in the top three by 24%), relational database management systems (first or second for 17%), product information management (in the top three by 18%) and master data (defining and ensuring consistency of data across systems, in the top three by 21%). Data discovery (automated assessment of associations in data) received the second-most first rankings (15%) but was seldom mentioned otherwise. In the previous research, product information management was not one of the top five

technologies, while data enrichment and data matching rank lower in the current research. When we asked about products offered by PIM technology vendors, the most commonly cited shortcomings are these: It is not easy to integrate across business lines and systems (42%); the total cost of ownership is too high (41%); too many data-related tasks are required to work efficiently (25%); and there are not enough data-related integration capabilities (22%) or capabilities to integrate and normalize information from disparate sources (also 22%). Very large organizations by employees (54%) and by revenue (52%) most often said it is not easy to integrate across business lines and systems. Integration of product information management is critical for superior performance, as is managing the various data-related tasks.

Integrating and managing data is essential to PIM.

Effective product information management requires managing the systems that contain product data that must be integrated, and often there are many of them. The research finds that more than one-quarter (28%) of organizations have 11 or more systems containing product data. Almost two-thirds of organizations have

five to 10 systems (28%) or one to four systems (36%). Looked at another way, most (56%) organizations have more than five systems that contain product data.

The types of information that businesses most frequently integrate with product information are pricing (70%), financial (68%), customer (60%), organizational and financial reporting (58%) information and product-related images and videos (51%). In the next 12 to 18 months organizations plan to integrate other types of product information, including metrics or measurements (20%) and supplier (18%), hierarchy or category (18%), location (17%) and geographic (16%) information. When it comes to developing strategy and planning, additional priorities include services (16%) and time and calendar (16%) as well as product-related images and video (15%). But only a small percentage (10%) of organizations are synchronizing all sources of product information with the corporate product information master; nearly half (48%) are synchronizing some of this data.

The top five types of data that organizations consider important to integrate with production information management processes are analytics data (for 52%), transactional product-related data from applications (51%), content such as images and videos (49%), unstructured data such as documents (48%) and pricing information from other systems or from catalog systems (42% each). This prioritization is similar to that in the previous research except that analytics data (43%) and transactional product-related data from applications (38%) ranked lower then, indicating the rise in importance of these two types of data in the interim. In addition, among data standards we find that importance of XML has increased, to 54 percent from 39 percent in the previous research (39%), showing a growing need for the interchange of product information using XML. Supporting a range of content and data for product information management is essential to fully meet the requirements of business applications and processes. This explains why the research finds data integration to be the top technology used to support PIM.

“

Only one-third of organizations have a system that provides a single source of product information; more than half (57%) do not have one.

Standardizing product information benefits business.

A common objective of product information management is to standardize product-related data to ensure availability of a consistent, single source of product information. But this research finds that only one-third of organizations have a system that provides a single source of product information, while more than half (57%) do not have such a system. Fewer organizations now have a single system than in the previous research (54%).

Organizations that have a single source said

that they are satisfied with their overall PIM efforts (37%) more often than those that do not have one (14%) and expressed similar views about their efforts in electronic commerce (58% vs. 14%). The largest percentage (44%) of organizations said that it requires significant effort to standardize product information into a complete, consistent and reliable form; 30 percent said it requires some but not significant effort, and half as many (16%) said it is very difficult and requires substantial effort. Only 5 percent indicated it's not a problem. The previous research found similar distribution of comments regarding the difficulty to standardize product information; apparently little progress has occurred in this significant aspect of product information management.

The level of effort required to standardize product information typically depends on the processes and underlying technology. Asked about challenges in managing product information, organizations most often cited identifying incomplete product attributes (ranked first or second by 24%); distributing product information to trading partners, suppliers or target markets (first or second for 21%); canceling, discontinuing or deleting products (also 21%); managing disparate or conflicting product content (19%); and managing new product introductions (16%). The core issues that create the most challenges are specific to the product information management processes; PIM technology is designed to handle such tasks, but generic tools like spreadsheets and databases are not.

“

The most widely cited benefit of using dedicated PIM software is to eliminate errors and mistakes in product information.

The research also identifies benefits of using dedicated product information management software. The most widely cited benefits are to eliminate errors and mistakes in product information (for 74%), improve the customer experience through consistent product information (61%), gain competitive advantage through faster time to market with products (58%), make product information available in a consistent manner across channels (58%), and improve cross-sell and up-sell potential of products (55%). Participants in the lines of business significantly more frequently than those in IT cited eliminating errors and mistakes (85%), gaining competitive advantage through faster time to market (70%) and improving cross-sell and up-sell potential (65%).

This research finds notable increases in the numbers of participants who identified certain benefits of dedicated PIM software now as compared to four years ago; for example, many more pointed to eliminating errors and mistakes (74% now vs. 47% then), improving the customer experience (61% vs. 47%) and gaining competitive advantage (58% vs. 36%). Having such benefits improves the usefulness and value of product information and perhaps boosts business results.

PIM software serves many roles in the organization.

Product information management is an activity that involves a variety of roles, crossing department lines and in some cases encompassing the entire organization. The administration of PIM is usually the responsibility of an analyst or someone in an operational position; these functions are held accountable for the product processes of the organization. According to the research, the five analyst capabilities most often cited as important for product information management technology are the abilities to apply analytics to improve product information (67%), publish product information across multiple channels (55%), establish workflow and approval for governance purposes (50%), discover and associate product information across multiple systems (48%) and communicate issues and changes to product information (45%).

The IT or information management capabilities that participants most often called important for product information management technology are the abilities to enable import from spreadsheets for easy upload and maintenance (52%), define and assign attributes for classification (48%), provide role-based access and security (also 48%), determine impacts of potential changes to product data (45%), and extract product information from operational systems (45%).

“

Any PIM software evaluation should take into account the variety of roles that require functionality tailored to their needs.

Management or manager roles provide oversight of PIM processes and also have requirements that help them ensure that product information is being utilized effectively. In this regard, the capabilities cited most often as important for product information management technology are to collaborate with a team on product-related items (66%), monitor processes for ensuring compliance and governance (60%), provide communication and resolution (60%), establish goals for product plans and objectives (58%) and review reports and metrics from analytics and dashboards (42%).

For customers who consume product information, being able to interact with it is critical regardless of the application or the device in use. For them the most often important capabilities are to get more detailed information on products (65%), read product information (55%), access product information easily on mobile devices (52%), view images of products (38%) and compare products and prices to others (34%). Any PIM software evaluation should take into account the variety of roles that require functionality tailored to their needs.

It is critical to establish plans for PIM.

Product information management impacts all the dynamic functions of an organization: marketing, sales, customer service, operations, the supply chain and

finance. Thus, no matter how recently changes and investments have been made, there are likely to be ways that product information can be further improved. Asked about changes, the largest percentage (41%) of research participants said their organization is planning to change the way it manages product information in the next 12 to 18 months; fewer organizations (32%) said they are not planning changes, and more than one-fourth (27%) said they don't know whether they will undertake any changes. Excluding those who said they don't know, we find that large and very large organizations by number of employees (71% and 69%, respectively) and by revenue (76% and 68%) are planning to change much more often than are small and midsize ones. Four years ago, more organizations said they were planning to change (57%) than was the case in this research (41%), and it's likely that some did. That said, a significant number of organizations in this latest research still plan to change.

“

Plans for change related to PIM derive from fundamental issues that affect the processes to create, manage and use product records.

Organizations planning to make changes are not satisfied with the results of the process they currently use for creating a product record (67%) more often than those not planning to change (44%). The organizations planning to change also most often make heavy use of spreadsheets (42%). The most common reasons driving change are a desire to improve data quality (cited by 66%), a data governance initiative (46%), an operational efficiency and cost savings initiative (42%), business unit complaints about data quality (39%) and errors and mistakes that impact business (36%). Thus we find that plans for change related to product information management derive from fundamental issues that affect the processes to create,

manage and use product records.

While many organizations would like to improve their product information management, the research shows that most encounter barriers to doing this. Most of the widely cited barriers are not technical but organizational: lack of resources (47%), low priority (45%), no budget (43%), a business case that is not strong enough (35%) and lack of awareness (22%). Business-side participants (58%) most often cited lack of resources, and very large organizations (by employees, 70%, and by revenue, 67%) most often said there is no budget. The top three responses were the same in the prior research. Regarding lack of resources, we note that a dedicated PIM product can save time and resources wasted in using manual efforts and inappropriate tools.

Overcoming these challenges requires investment, and the research finds that among organizations the source of funds varies for purchasing PIM technology. Most frequently used is the business IT budget (32%), followed by the general IT budget (26%), the general business budget (18%) and a shared service funded by

business (15%). But no matter where the funds originate, a business case for investment is required, and the effort to gain approval of it should be based on the requirements that matter the most to the organization. The research finds that these imperatives include customer satisfaction and experience (for 61%), business intelligence (55%), customer service (42%), multichannel commerce or channel expansion (34%), business-to-business collaboration across the supply chain (33%) and e-commerce (33%). The top three responses are the same as four years ago, though in this research greater percentages said they base the business case on customer satisfaction (53% previously), business intelligence (47%) and customer service (38%). An organization's overall focus on customer satisfaction and experience can be a convincing reason for investing in PIM software, which can help in marketing, selling and serving those who buy the company's products and services.

Making PIM effective today also requires paying attention to a broader set of technologies. To improve product information management processes, organizations cited most often as critical technologies analytics (74%), collaboration (51%), big data (47%), mobility (46%) and cloud computing (39%). Very large organizations by employees (92%) and revenue (94%) were close to unanimous in declaring the importance of analytics. Analytics also topped the list in our research four years ago (60%), but other technologies – big data, mobility and collaboration – all received more mentions in the new research and are gaining in importance. It is clear from this and other recent research that the use of analytics is essential to product information management and should be part of every organization's efforts.

“

The importance of the user experience and of making applications useful for nontechnical people is a common trend.

When it comes to selecting product information management software, organizations identified as very important these product and vendor considerations: usability (60%), reliability (56%), functionality (48%), manageability (45%), TCO/ROI (37%), adaptability (36%) and validation of the vendor (21%). More than 80 percent of participants said the first four of these are important or very important. In the earlier research adaptability was most often rated very important (49%). As in other recent research, here we find usability receiving the most mentions as very important and adaptability rated much lower in importance. The importance of the user experience and of making applications useful for nontechnical people is a common trend

across business applications.

Organizations prefer to access product information management applications and tools on premises (55%) by a large margin over on demand (20%) and hosted by supplier (6%); however, nearly one in five expressed no preference (19%). Very



large organizations by employees (25%) and by revenue (28%) selected on-demand access more often than did other sizes. The significantly lower interest in the use of cloud computing here as compared to other recent research may be due to the need for product information management to be customized to an organization's internal business processes, which can be more difficult in a cloud environment.

10 Best Practice Recommendations

This benchmark research reveals significant new insights into the evolving nature and use of product information management (PIM) processes and systems. For organizations considering how to derive full value from their product information, we offer the following recommendations.

1. Engage a range of roles in creating and using consistent product information.

Many organizations see product information management as primarily an IT responsibility with some involvement of functions responsible for the creation and marketing of the products themselves. Responsibility most commonly lies with a manager of product-related areas (39%) and/or someone responsible for defining and managing product information (27%). Yet many business roles depend on useful product information, so consider who else should take part in these processes, perhaps including marketing, sales, customer service, operations, the supply chain and finance. Provide software that has specific capabilities for each of these roles and support for the product processes they are responsible for or participate in.

2. Find a reliable way to standardize product information.

Organizations need a single consistent source of product information that everyone can use with confidence, but only one-third of organizations in this research have a system that provides such a source, and 44 percent said that it requires significant effort to standardize product information. Dedicated PIM products are designed to handle the challenges in doing this. Adopting one not only can solve common issues such as eliminating errors and ensuring consistency but also help companies improve the customer experience, gain competitive advantage through faster time to market and improve the cross-sell and up-sell potential of products.

3. Instill trust and confidence in your product information.

The research finds that only 16 percent of organizations completely trust their PIM processes, including those for B2B and B2C operations. Only half said that they are confident in the quality of their product information itself. Confidence increases when organizations have a single source of product information, have integrated PIM and master data management systems, and rarely or almost never use spreadsheets for PIM. Applying capable technology to rigorous processes can improve efficiency and reliability and improve business users' satisfaction with and trust in product information as well.

4. Use PIM in digital commerce to improve the customer experience.

Half or more research participants said that PIM is important to business-to-business interactions, electronic commerce, consumer access to product information on the Web and mobile devices, and sharing of product-related information with suppliers; thus it impacts all parties that encounter one's products. Organizations, especially larger ones, often have complex value chains from suppliers to distributors to customers, and many of the contact points are electronic. Assess the extent of your digital commerce systems and consider the necessity of integrating product information management with them, which 60 percent of organizations said is very important. In any organization PIM can add significant value to business-to-business and business-to-consumer efforts – value that can correlate directly to the customer's product experience.

5. Identify and resolve technology and data issues.

Users have too many incompatible tools; there are too many disparate forms of data; it is too hard to standardize data when using multiple systems; there is no centralized information repository; there are multiple unsynchronized metadata stores. These are common issues impeding effective use of product information management in various ways, all cited by 40 percent or more participants. To deal with these and other impediments, develop a systematic plan for PIM that collects and stores data centrally, rationalizes the number and kinds of technology used, and specifies and enforces use of a few processes by all parties that handle product information.

6. Integrate the use of PIM and MDM.

The research finds that almost half of organizations have a master data management system, but only 16 percent have integrated it with product information management. Almost three times as many organizations that have MDM integrated with PIM (48%) said they are satisfied with their product information management efforts than those that have not integrated the two (18%). Harmonizing use of the two can help in managing a master version of product information, which in turn can facilitate the creation of product records. Be aware that most modern PIM software includes MDM capabilities and can be integrated with enterprise MDM or used to manage product-related information.

7. Eliminate the use of spreadsheets in product information management.

The most common ways in which organizations currently try to create a single, complete, consistent and reliable product record are through manual effort (48%) and spreadsheets (38%). Facing the complexity of the information associated with products today, these approaches are sure to fall short. We do find a substantial decline in the number of companies using them in comparison to

those in our research of five years ago, and we encourage those that persist in it to stop. The likelihood of product-related errors that must be corrected after they have been shared with others is reason enough to change: Nearly two-thirds of heavy users of spreadsheets find them frequently. Develop a path to eliminate the use of spreadsheets for PIM, which are known to create issues with accuracy and increase the resources and time required to manage product information.

8. Evaluate tools for integrating the variety of product data.

Most (56%) organizations participating in the research have more than five systems that contain product data, which must be integrated to produce a single, consistent set of information. The types are diverse, the most important being analytics data, transactional product-related data, images and videos, unstructured data such as documents and pricing information. In this context it is not surprising that data integration is the top technology used to support PIM. Determine whether such a tool is necessary to your efforts, and look for products that can streamline this critical preliminary part of the process.

9. Establish ongoing plans for managing product information.

The complexity of product information and the fast pace of business competition place intense pressure on companies. The research finds 41 percent of participating organizations planning to change the way they manage product information in the next 12 to 18 months. More than two-thirds of large and very large companies intend changes. Most often they will do so to improve data quality, data governance and operational efficiency and to gain cost savings. Ask whether change is necessary in yours; if so, be sure to build a strong business case, promote awareness of the need for improvement, and find resources and a budget to make it happen.

10. Assess technologies that can enhance your efforts.

New technologies have become available to support management of product information. Among them, three-fourths of all participants and more than 90 percent of those from very large organizations said analytics is a critical technology to improve PIM processes. Two-fifths or more also said this about collaboration, big data and mobility; each of these technologies received more mentions than in our 2012 research. It also is notable that usability is now the product evaluation criterion most often called very important, which reflects expectations of today's users. Investigate all of these, and involve potential users in the process.



About Ventana Research

Ventana Research is the most authoritative and respected benchmark business technology research and advisory services firm. We provide insight and expert guidance on mainstream and disruptive technologies through a unique set of research-based offerings including benchmark research and technology evaluation assessments, education workshops and our research and advisory services, Ventana On-Demand. Our unparalleled understanding of the role of technology in optimizing business processes and performance and our best practices guidance are rooted in our rigorous research-based benchmarking of people, processes, information and technology across business and IT functions in every industry. This benchmark research plus our market coverage and in-depth knowledge of hundreds of technology providers means we can deliver education and expertise to our clients to increase the value they derive from technology investments while reducing time, cost and risk.

Ventana Research provides the most comprehensive analyst and research coverage in the industry; business and IT professionals worldwide are members of our community and benefit from Ventana Research's insights, as do highly regarded media and association partners around the globe. Our views and analyses are distributed daily through blogs and social media channels including [Twitter](#), [Facebook](#) and [LinkedIn](#).

To learn how Ventana Research advances the maturity of organizations' use of information and technology through benchmark research, education and advisory services, visit www.ventanaresearch.com.



Appendix: About This Benchmark Research

Methodology

Ventana Research conducted this benchmark research on the Web from May through August 2016. We solicited survey participation via email, our website and social media invitations. Email invitations were also sent by our media partners and by vendor sponsors.

We presented this explanation of the topic to participants prior to their entry into the survey:

Managing product information can be a difficult challenge. Industries, companies and even individuals within them frequently use different names and attributes for the same things. Disparities often exist across departments and business processes including marketing, sales, commerce, the supply chain and finance. To understand how organizations are coping with these challenges and how they have progressed since our last benchmark research, Ventana Research is conducting new research to examine organizations' existing and planned approaches to product information management (PIM). We will use this research to determine best practices and steps necessary for improvement.

The following promotion incented participants to complete the survey:

What's In It For You? Upon completion of the research, all qualified participants will receive a report on the findings of this benchmark research to support their organization's efforts, along with a \$25 Amazon.com gift certificate. In addition, all qualified participants will be entered into a drawing to win one of 25 benchmark research reports and a 30-minute consultation, a package valued at US\$1,495 or €1,232. Thank you for your participation!

Qualification

We designed the research to assess the use of and plans for spreadsheets across organizations and industries. Qualification to participate was presented to participants as follows:

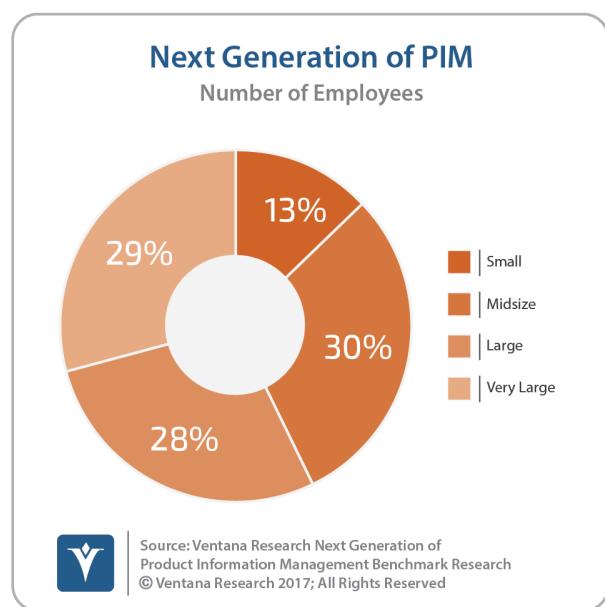
The survey for this benchmark research is designed for business and IT professionals who are involved with product information in marketing, sales, operations, manufacturing and IT departments and those, such as consultants, who support this area of focus. Solution providers, software vendors, consultants, media and systems integrators may participate in the survey, but they are not eligible for incentives and their input will be used only if they meet the qualifications. Incentives are provided to qualified participants in the research and also are conditional on provision of accurate contact information including company name and company email address that can be used for fulfillment of incentives.

Further qualification evaluation of respondents was conducted as part of the research methodology and quality assurance processes. It entailed screening out responses from companies that are too small, questionnaires that were not materially complete, or those where the submission is from an inappropriate submitter or appears to be spurious.

Demographics

We designed the survey used for this research to be answered by executives and managers across a broad range of roles and titles working in organizations. We deemed 206 of those who clicked through to this survey to be qualified to have their answers analyzed in this research. In this report, the term "participants" refers to that group, and the charts in this section characterize various aspects of their demographics and qualifications.

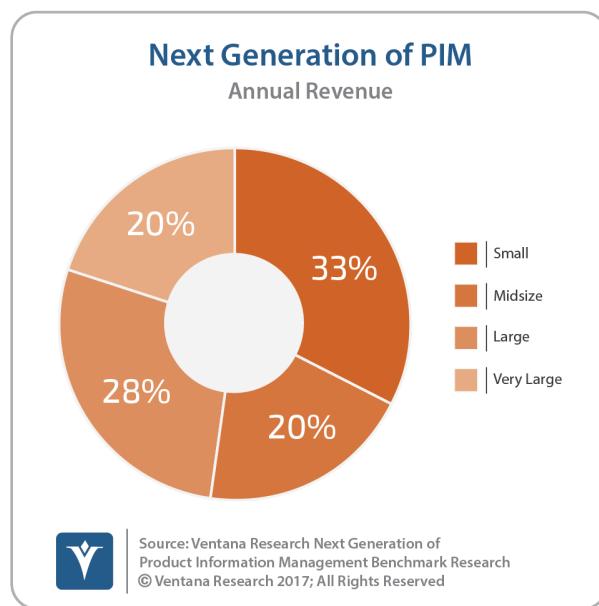
Company Size by Workforce



We require participants to indicate the size of their entire company. Our research repeatedly shows that size of organization, measured in this instance by employees, is a useful means of segmenting companies because it correlates with the complexity of processes, communications and organizational structure as well as the complexity of the IT infrastructure. In this research, participants represented a broad range of organization sizes in mostly equal numbers: 29 percent work in very large companies (having 10,000 or more employees), 28 percent work in large companies (with 1,000 to 9,999 employees), 30 percent work in midsize companies (with 100 to 999 employees), and 13 percent work in small companies (with fewer than 100 employees).

This distribution is consistent with prior benchmark research and our research objectives and provides a suitably large sample from each size category.

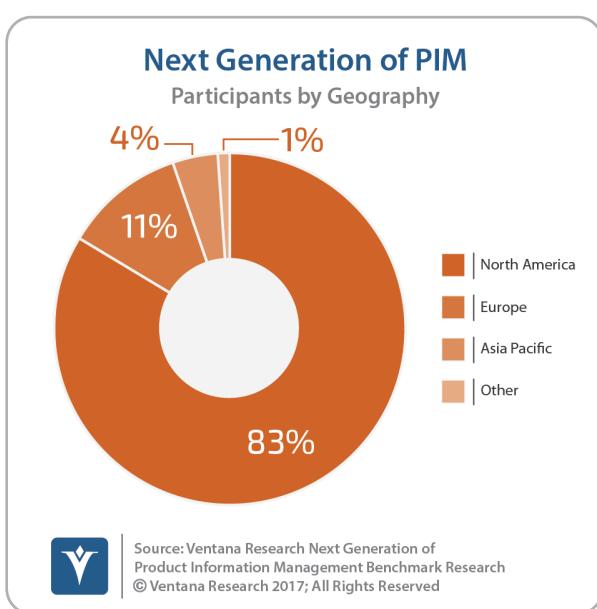
Company Size by Annual Revenue



projects when we measure by revenue instead of head count.

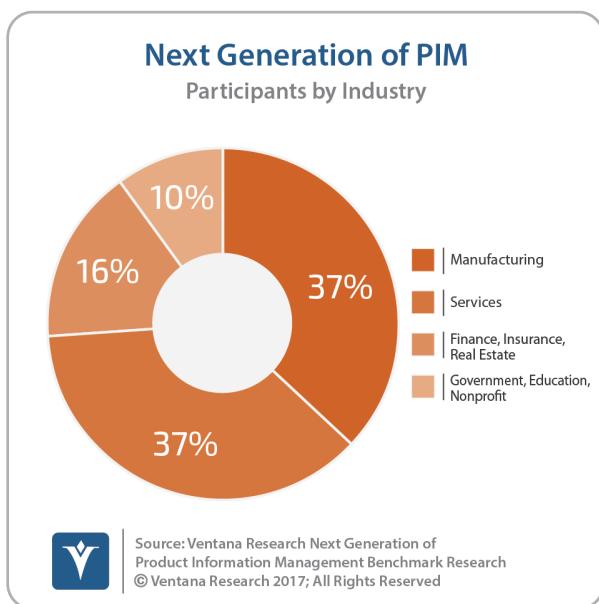
When we measured size by annual revenue, the distribution of categories shifted downward; fewer companies fell into the largest category and more than twice as many are small. By this measure, 9 percent fewer are very large companies (having revenue of more than US\$10 billion), the same number are large companies (having revenue from US\$500 million to US\$10 billion), 8 percent fewer are midsize companies (having revenue from US\$100 to US\$500 million), and 20 percent more are small companies (with revenue of less than US\$100 million). This sort of redistribution is typical in our research

Geographic Distribution



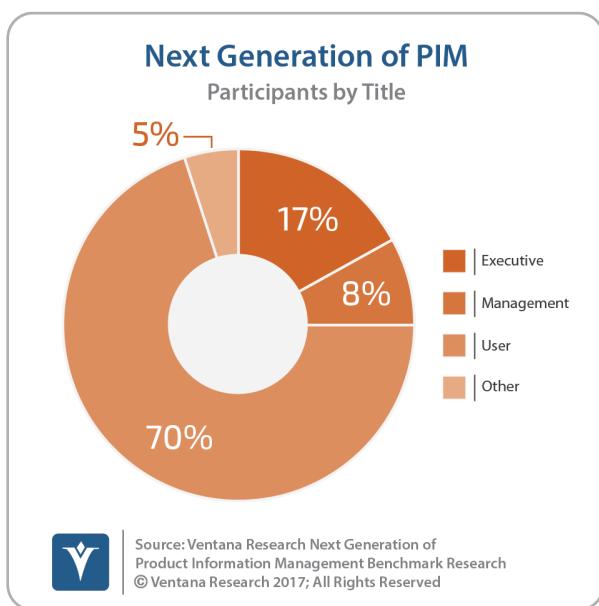
A large majority (83%) of the participants were from companies located or headquartered in North America. Those based in Europe accounted for 11 percent, in Asia Pacific for another 4 percent and in all other regions for 1 percent. This result was in keeping with our expectations at the start of this investigation, since organizations participating in our research most often are headquartered in North America. However, many of these are global organizations operating worldwide.

Industry



The companies of the participants in this benchmark research represented a broad range of industries, which we have categorized into four general categories as shown below. Companies that provide services and those in manufacturing each accounted for 37 percent or nearly three-fourths of the total participants. Those in finance, insurance and real estate accounted for 16 percent. Government, education and nonprofits accounted for the remaining 10 percent.

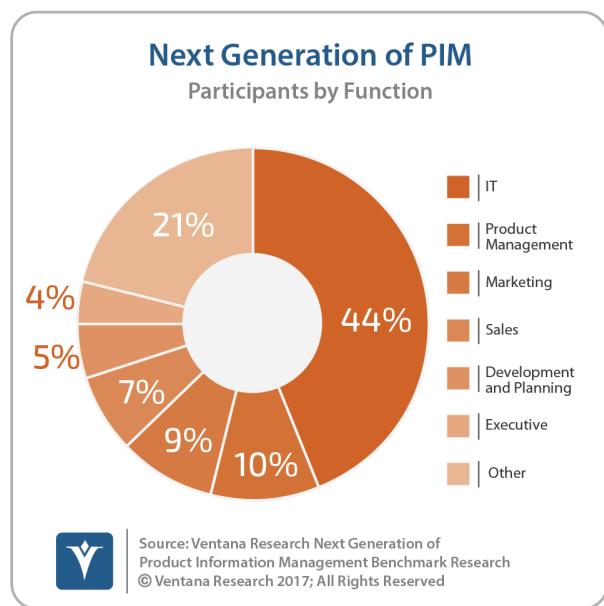
Job Title



We asked participants to choose from among 14 titles the one that best describes theirs. We sorted these responses into four categories: executives, management, users and others. Seven out of 10 identified themselves as having titles that we categorize as users, a grouping that includes director (25%), senior manager or manager (29%), analyst (5%) and staff (11%). Fewer than one-fifth are executives; the majority of them (10%) are CIOs. Another 8 percent are management, by which we mean vice presidents. Others, nearly all of them consultants, accounted for the balance. We concluded after analysis that this

response set provided a meaningfully broad distribution of job titles.

Role by Functional Area



We asked participants to identify their functional area of responsibility as well. This enabled us to identify differences between participants who have differing roles in the organization. The greatest percentages of the participants identified themselves as being in IT, and 26 percent work in product management, marketing or sales. A total of 9 percent perform front-office roles in development and planning, or are executives. Another 18 titles, none with more than 3 percent of the total, comprised the Other category.