59. To what extent can your company monitor in real time the conditions of outbound shipments?
- ○ No plans to monitor shipment conditions
- ○ Evaluating the use of shipment monitoring
- ○ Trialing the monitoring of applicable shipments
- ○ Monitoring some applicable shipments
- ○ Monitoring many applicable shipments
- ○ Monitoring all applicable shipments
- ○ Don't know

60. How are optimum (e.g., lowest costs, timeliness) routes and modes of transportation determined for inbound shipments?
- ○ Shippers/providers determine routes and modes
- ○ Suppliers determine routes and modes based on past history
- ○ Suppliers determine routes and modes based on recent market information
- ○ Our company and suppliers collectively determine routes and modes based on shared market information
- ○ Optimum routes and modes automatically set on a daily basis based on market information
- ○ Optimum routes and modes set dynamically in real time
- ○ Don't know

61. How are optimum (e.g., lowest costs, timeliness) routes and modes of transportation determined for outbound shipments?
- ○ Shippers/providers determine routes and modes
- ○ Our company determines routes and modes based on past history
- ○ Our company determines routes and modes based on recent market information
- ○ Our company and customers collectively determine routes and modes based on shared market information
- ○ Optimum routes and modes automatically set on a daily basis based on market information
- ○ Optimum routes and modes set dynamically in real time
- ○ Don't know

62. What percentage of inbound shipments are damaged or lost in transit?
- ○ More than 5%
- ○ 4-5%
- ○ 3-4%
- ○ 2-3%
- ○ 1-2%
- ○ Less than 1%
- ○ Don't know

63. What percentage of outbound shipments are damaged or lost in transit?
- ○ More than 5%
- ○ 4-5%
- ○ 3-4%
- ○ 2-3%
- ○ 1-2%
- ○ Less than 1%
- ○ Don't know

64. Which of the following constraints impair or preclude your company's ability to digitize logistics/transportation processes? (choose all that apply)
- ☐ Human resources/talent
- ☐ Improvement-process knowledge
- ☐ Access to enabling technologies
- ☐ Leadership/guidance
- ☐ Funding
- ☐ Infrastructure
- ☐ Lack of external support (e.g., system integrators)
- ☐ Other (please specify):
- ☐ No constraints
- ☐ Don't know

65. Please include comments/notes for the Logistics/Transportation category that can help in planning digital improvements for your company.

VI. CUSTOMERS

Digitally mature customer-focused processes enable a company to better understand customer needs and improve the customer experience.

Examples of technologies that enable digitally mature customer processes include:
- Online portals that allow customers to pull and share customized information when required, from orders and billing data to after-sales support and services
- Customer relationship management systems (CRM) to analyze customer interactions and data throughout the customer lifecycle
- Electronic data interchange systems (EDI) to efficiently manage transactions and product deliveries

Digital best practices include capturing and leveraging customer information (buying habits and patterns, complaints, product queries, product-usage data) for customized marketing and sales communications (e.g., online, email, social media).

Digitally enhanced outcomes include world-class customer metrics, including retention rate, satisfaction scores, and sales growth per customer.

66. How does your company create a demand plan/sales forecast?
- ○ No demand plan is produced ("let's see what we've got")
- ○ Demand plan is based on the previous-year plan
- ○ Demand plan is based on quarterly consumption patterns
- ○ Demand plan is automatically set and based on monthly customer information (consumption patterns, forecasts)
- ○ Demand plan is automatically set and based on monthly customer information and market variables
- ○ Demand plan is dynamically set and based on real-time customer information and market variables
- ○ Don't know

67. Does your company digitally track its product from plant to customer site, and integrate that information into enterprise systems such as ERP or a customer EDI?
- ○ No digital tracking of product
- ○ Planning to digitally track product and integrate information into enterprise systems
- ○ Trialing tracking and integration of product information
- ○ Tracking some products and integrating digital information into some applicable enterprise systems
- ○ Tracking a majority of products and integrating information into many applicable enterprise systems
- ○ Tracking most or all products and integrating information into all applicable enterprise systems
- ○ Don't know

68. To what extent are digital technologies used to monitor and analyze customer behaviors and needs?
- ○ No plans to monitor customer behaviors and needs
- ○ Evaluating the applicability of digital technologies to monitor and analyze customer behaviors and needs
- ○ Trialing digital technologies to monitor and analyze customer behaviors and needs
- ○ Monitoring and analyzing behaviors and needs of some applicable customers
- ○ Monitoring and analyzing behaviors and needs of many applicable customers
- ○ Monitoring and analyzing behaviors and needs of all applicable customers
- ○ Don't know

69. To what extent are digital technologies used to customize communications with customers?
- ○ No plans to customize communications
- ○ Evaluating the applicability of digital technologies for customized communications
- ○ Trialing digital technologies for customized communications
- ○ Digital technologies used to customize communications with some applicable customers
- ○ Digital technologies used to customize communications with many applicable customers
- ○ Digital technologies used to customize communications with all applicable customers
- ○ Don't know

70. To what extent do customers have access to an online customer portal for support, technical information, best practices with products, product communities, etc.?
- ○ No customer portal
- ○ Evaluating customer portal options
- ○ Trialing a customer portal
- ○ Some customers have access to the customer portal
- ○ Many customers have access to the customer portal
- ○ All customers have access to the customer portal
- ○ Don't know

71. To what extent are digital technologies used to improve customers' experiences with your company's products?
- ○ No plans to improve customer experiences with digital technologies
- ○ Evaluating the applicability of digital technologies to improve customer experiences
- ○ Trialing digital technologies to improve customer experiences
- ○ Using digital technologies to improve the experiences of some applicable customers
- ○ Using digital technologies to improve the experiences of many applicable customers
- ○ Using digital technologies to improve the experiences of all applicable customers
- ○ Don't know

72. What is your company's customer retention rate (percentage of customers retained from previous year)?
- ○ Less than 50%
- ○ 51-60%
- ○ 61-70%
- ○ 71-80%
- ○ 81-90%
- ○ 91-100%
- ○ Don't know

73. What percentage of customers are digitally and automatically connected to your company and can send and receive sales, shipment, and order information in real time?
- ○ 0%
- ○ 1-10%
- ○ 11-30%
- ○ 31-50%
- ○ 51-80%
- ○ 81-100%
- ○ Don't know

74. Which of the following constraints impair or preclude your company's ability to digitize customer-focused processes? (choose all that apply)
- ☐ Human resources/talent
- ☐ Improvement-process knowledge
- ☐ Access to enabling technologies
- ☐ Leadership/guidance
- ☐ Funding
- ☐ Infrastructure
- ☐ Lack of external support (e.g., system integrators)
- ☐ Other (please specify):
- ☐ No constraints
- ☐ Don't know

75. Please include comments/notes for the Customers category that can help in planning digital improvements for your company.

VII. SUPPORT FUNCTIONS

Digitally mature support functions leverage operations and supply-chain data to improve the capabilities and performance of the organization.

Examples of technologies that enable digitally mature customer processes include:
- Secure network infrastructures that enable companywide access to real-time information (from production, warehouse, suppliers, logistics, and customers) for decision-making based on up-to-date internal and external conditions
- Big-data capabilities to analyze data in formats specific to functional roles

Digital best practices include cross-functional support; collaboration; and problem-solving to continuously improve customer value streams.

Digitally enhanced outcomes include functions aligned with corporate strategies, goals, and objectives.

76. How have operations and supply-chain data been leveraged to improve procurement processes at your company?
- ○ No operations and supply-chain data digitally shared with procurement
- ○ Infrequent/ad hoc use of digitally shared operations and supply-chain data by procurement
- ○ Occasional review and analysis (quarterly) of digitally shared operations and supply-chain data by procurement
- ○ Periodic review and analysis (monthly) of digitally shared operations and supply-chain data by procurement
- ○ Frequent review and analysis (weekly) of digitally shared operations and supply-chain data by procurement
- ○ Ongoing, dynamic review (real time) of digitally shared operations and supply-chain data in procurement
- ○ Don't know

77. How have operations and supply-chain data been leveraged to improve finance/accounting processes at your company?
- ○ No operations and supply-chain data digitally shared with finance/accounting
- ○ Infrequent/ad hoc use of digitally shared operations and supply-chain data by finance/accounting
- ○ Occasional review and analysis (quarterly) of digitally shared operations and supply-chain data by finance/accounting
- ○ Periodic review and analysis (monthly) of digitally shared operations and supply-chain data by finance/accounting
- ○ Frequent review and analysis (weekly) of digitally shared operations and supply-chain data by finance/accounting
- ○ Ongoing, dynamic review (real time) of digitally shared operations and supply-chain data by finance/accounting
- ○ Don't know

78. How have operations and supply-chain data been leveraged to improve sales and marketing processes at your company?
- ○ No operations and supply-chain data digitally shared with sales and marketing
- ○ Infrequent/ad hoc use of digitally shared operations and supply-chain data in sales and marketing
- ○ Occasional review and analysis (quarterly) of digitally shared operations and supply-chain data by sales and marketing
- ○ Periodic review and analysis (monthly) of digitally shared operations and supply-chain data by sales and marketing
- ○ Frequent review and analysis (weekly) of digitally shared operations and supply-chain data by sales and marketing
- ○ Ongoing, dynamic review (real time) of digitally shared operations and supply-chain data by sales and marketing
- ○ Don't know

79. How have operations and supply-chain data been leveraged to improve R&D/product development processes at your company?
- ○ No operations and supply-chain data digitally shared with R&D/product development
- ○ Infrequent/ad hoc use of digitally shared operations and supply-chain data by R&D/product development
- ○ Occasional review and analysis (quarterly) of digitally shared operations and supply-chain data by R&D/product development
- ○ Periodic review and analysis (monthly) of digitally shared operations and supply-chain data by R&D/product development
- ○ Frequent review and analysis (weekly) of digitally shared operations and supply-chain data by R&D/product development
- ○ Ongoing, dynamic review (real time) of digitally shared operations and supply-chain data by R&D/product development
- ○ Don't know

80. How have operations and supply-chain data been leveraged to improve customer service and support processes at your company?
- ○ No operations and supply-chain data digitally shared with customer service and support
- ○ Infrequent/ad hoc use of digitally shared operations and supply-chain data by customer service and support
- ○ Occasional review and analysis (quarterly) of digitally shared operations and supply-chain data by customer service and support
- ○ Periodic review and analysis (monthly) of digitally shared operations and supply-chain data by customer service and support
- ○ Frequent review and analysis (weekly) of digitally shared operations and supply-chain data by customer service and support
- ○ Ongoing, dynamic review (real time) of digitally shared operations and supply-chain data by customer service and support
- ○ Don't know

81. Which of the following constraints impair or preclude your company's ability to digitize support-function processes? (choose all that apply)
- ☐ Human resources/talent
- ☐ Improvement-process knowledge
- ☐ Access to enabling technologies
- ☐ Leadership/guidance
- ☐ Funding
- ☐ Infrastructure
- ☐ Lack of external support (e.g., system integrators)
- ☐ Other (please specify):
- ☐ No constraints
- ☐ Don't know

82. Please include comments/notes for the Support Functions category that can help in planning digital improvements for your company.

VIII. SMART PRODUCTS

Digitally mature R&D/product-development processes incorporate smart devices/embedded intelligence into products to enhance customer value and drive growth.

Examples of technologies that enable smart products include:
- Smart devices and embedded intelligence in products and/or packaging and labeling to capture real-time information from customers (e.g., delivery, usage, problems).
- Product lifecycle management systems (PLM) to aggregate and share product information and automate product development processes
- Robust wireless communication protocols that support the capture and sharing of information from smart products.

Digital best practices include the application of product data in the development, sales, and marketing of new products and services; standardized product development processes; and collaboration with customers and suppliers to develop smart products.

Digitally enhanced outcomes include improving sales metrics, including revenues, profit margins, and market share.

83. Has your company developed smart products (i.e., products that incorporate smart devices/embedded intelligence and/or ship with smart packaging or labeling)?
- ○ No plans to develop smart products
- ○ Considering smart products
- ○ Trialing smart products with one product line
- ○ Smart products developed for a few applicable product lines
- ○ Smart products developed for a majority of applicable product lines
- ○ Smart products developed for most applicable product lines
- ○ Not applicable
- ○ Don't know

84. What percentage of all company products incorporate smart devices/embedded intelligence and/or ship with smart packaging or labeling?
- ○ 0%
- ○ 1-10%
- ○ 11-25%
- ○ 26-50%
- ○ 51-75%
- ○ More than 75%
- ○ Not applicable
- ○ Don't know

85. Does data from products in the field inform next-generation product development?
- ○ No data from products in the field
- ○ Planning to capture data from products in the field
- ○ Trialing capture of data from products in the field
- ○ Some product data occasionally used by product development
- ○ Substantial product data regularly used by product development
- ○ Substantial real-time product data regularly used by product development
- ○ Not applicable
- ○ Don't know

86. How much has your company invested in the development of smart products (as a percentage of annual revenue)?
- ○ 0%
- ○ 1-2%
- ○ 3-4%
- ○ 5-10%
- ○ 11-15%
- ○ More than 15%
- ○ Not applicable
- ○ Don't know

87. Which of the following constraints impair or preclude your company's ability to develop smart products? (choose all that apply)
- ○ Human resources/talent
- ○ Improvement-process knowledge
- ○ Access to enabling technologies
- ○ Leadership/guidance
- ○ Funding
- ○ Infrastructure
- ○ Lack of external support (e.g., system integrators)
- ○ Other (please specify):
- ○ No constraints
- ○ Don't know

88. Please include comments/notes for the Smart Products category that can help in planning digital improvements for your company.

When you submit your assessment, you will be given an opportunity to review your answers and save a copy of your responses:

- **Click on "Submit your assessment" below. You will then be presented with your entire questionnaire as a single, scrollable page. At the top of the page is a "Download PDF" option.**
- **Review your answers:**
  - **If you are satisfied with your answers, scroll to the bottom of the page and click on "Submit your assessment." You will automatically access the data visualization website and your assessment results.**
  - **If you are not satisfied with your answers, click on "Previous category" and revise your answers as necessary. When you are finished, proceed to the end of the assessment questionnaire and repeat the submission process.**