Manufacturing
is changing.
Are you ready?

NUANCE

Executive summary

Manufacturing drives the economies of developed and emerging countries. In fact, manufacturing contributes 16% of global gross domestic product and 14% of global employment.[1] Within the manufacturing industry, there are many sectors and subsectors. The North American Industry Classification System (NAICS) breaks down the manufacturing industry into 21 different sectors. Each sector has its own unique set of challenges. Some segments rely more heavily on innovation, whereas others focus on new markets and faster time-to-market. However, they all have one thing in common: Their products must be profitable to stay in business.

Getting the product out the door

Manufacturers face tremendous pressure to provide innovative products quickly to increase revenue and stay competitive in highly dynamic environments. To do so, they need a strategic focus on a product's life cycle. Product life cycle management is a strategic approach to managing a series of changes undergone by a product through conception, design, launch and end-of-life. Making slow, manual processes more streamlined and secure are important.

In highly competitive segments such as pharmaceuticals, technology and transportation, it is important to accelerate product development. Every company races to be the first to develop the next innovation and be the first to bring it to market. Accelerating time-to-market is key to any manufacturer's success. A head start on the competition is the best way to ensure a product's profitability. Companies that get their products to market late are forced to compete at commodity price points and suffer poor returns on R&D investments.

Developing new products is not easy. This process moves from a single idea to a concept to viability testing and, eventually, product launch, a process which may take years. On average, it takes a pharmaceutical company 10 years to develop a new drug from discovery to market.[2]

Each step of the product development process requires an enormous exchange of information. Market research has to be completed, customers testing done, patents protected, document designed, materials sourced, and specifications developed, and that does not capture it all. Today, much of this information is still paper-based.

Enter Industry 4.0

Industry 4.0, also known as the fourth industrial revolution, is coming. Some say it is already here. Industry 4.0 is expected to change the way manufacturers work. According to McKinsey, Industry 4.0 is driven by four disruptions: the increase in the amount of data supplied, computational power and connectivity; new forms of human-machine interaction; the emergence of analytics and business-intelligence capabilities; and improvements for transferring digital instructions to the physical world. Manufacturers must prepare for this digital transformation. Paper-based processes will have no place in this world. Working in a more automated and connected environment, it becomes ever-more important to ensure the efficient, streamlined and secure flow of documents and information.

1 McKinsey
2 Pharma.org

Managing paper-based document workflows

With these disruptions challenging the manufacturing industry, managing the flow of documents and information is critical. Yet, many manufacturers use paper-based processes and legacy systems. Managing operations with paper-based processes or elaborate spreadsheets is labor-intensive and risky. Pushing paper is not only a waste of time but also distracts employees from other important tasks.

Manual processes slow the pace of work throughout the enterprise and create risks that can lead to bigger problems. Manual processes slow down data entry and data sharing, forcing managers to use aging data to make business decisions. Old data may not present an accurate representation of the current manufacturing environment. Basing decisions on old data can have negative consequences, including undetected product quality issues. Per the Aberdeen Group, 53% of manufacturers stated that they still rely on paper-based or manual systems.

Managing documents can also be costly. On average, the labor cost to file one paper document is $20. It costs $120 in labor to find a misfiled document and $220 to reproduce a lost document.[3] According to PricewaterhouseCoopers, 7.5% of all documents are lost and 3% are misfiled. If a manufacturer uses 100,000 documents annually, 3% of which are misfiled, then 3000 documents will be misfiled annually, incurring a cost of $360,000 for their retrieval. If these documents had to be recreated, costs would reach $660,000. That is tantamount to a whole new research project.

$220

On average, the labor cost to reproduce a lost document.

Securing intellectual property

Protecting intellectual property is vital to a manufacturers' success. Intellectual property includes product designs, software code, trade secrets, patents and trademarks, among others. Securing this information is important to the competitiveness and profitability of a company. Manufacturers are especially prone to damage from intellectual property theft because of counterfeit products and stolen designs.

To boost competitiveness, manufacturers are beginning to collaborate with partners, suppliers, universities and other manufacturers more frequently. This entails sharing information outside of the manufacturer's firewall. To be effective, information needs to be digitized and securely shared with all key stakeholders along the value chain. The importance of securing this information cannot be overestimated; for 34% of companies have had sensitive information compromised due to poor file management practices.[4]

34%

of companies have had sensitive information compromised due to poor file management practices.

Using mobility to revolutionize manufacturing

Eighty-one percent of CEOs consider mobile technologies strategically important for their enterprises.[5] These same CEOs say that digital technologies, including mobile devices, can create a competitive advantage. Using mobile phones and tablets with product life cycle management processes can improve the accuracy of information and speed time to market with greater security, collaboration and responsiveness along the value chain.

Mobile devices that communicate with manufacturing systems can provide real-time information from anywhere to anywhere. This allows decisions to be made with the most up-to-date information available. Issues can be fixed quickly, which increases product quality and decreases the time to launch.

Mobile applications in use in manufacturing today
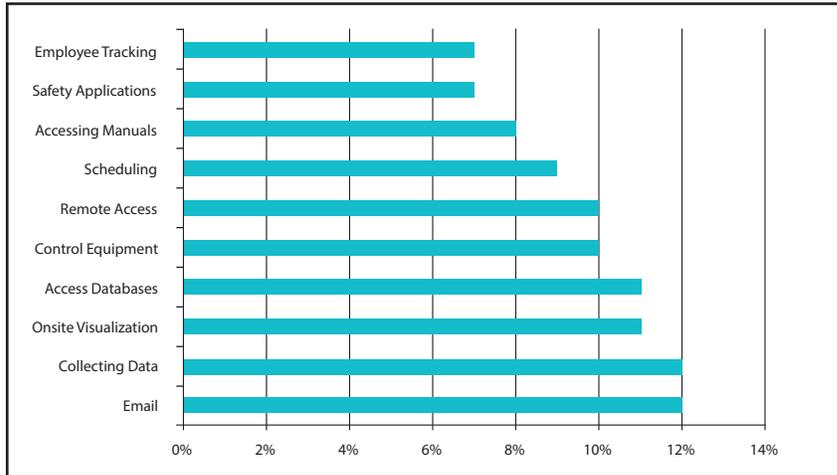
Source: IHS Technology

Helping manufacturers improve product development and production

Nuance helps manufacturers gain control of their document processes, transforming them into faster, safer and more compliant workflows. Our solutions are easy to implement and easy to use, thereby enabling manufacturers to achieve operational efficiencies, secure all their information (both paper and electronic), maintain compliance and maximize profitability.

Integrating with current workflows, Nuance solutions:

– Speed time-to-market
– Reduce manual input and errors
– Capture documents on any device
– Increase the security of sensitive data
– Provide an audit trail for development and production documentation
– Simplify information sharing among departments
– Increase mobile worker productivity

A simple, streamlined process in action
Let us look at product development. A typical product development process illustrates how Nuance increases the speed, accuracy and efficiency of document-based workflows.

4 Closing the Document Management
  Awareness Gap
5 PwC's 18th Annual Global CEO Survey

Digitizing documents at the point of origin
The process often begins with an idea. In our example, an engineer has an idea for a new widget. This engineer wants to test the concept to determine its viability as a product. She pitches the idea and gets approval to begin the product development process. From there, the New Product Development Manager is tasked with ensuring that all the concept development data is in the right system, protected and available to the product development team. As the process moves forward, many more documents and pieces of data will be added to the system, which requires scanning multiple documents from multiple sources. Nuance lets the engineer do that right from the control panel of the MFP. She unlocks the device by swiping a proximity ID card or entering her username and password or PIN number on the machine's front panel or on a mobile device. The touch screen then displays buttons for the functions or predefined workflows she is authorized to use. In this case, a button allows her to send information directly to the appropriate location for the development team to access. This solution lets her access the workflows associated with her widget.

Automating error-prone manual tasks
Everything about the Nuance automated process is designed to simplify use, minimize manual tasks and reduce risk.

The assistant will not have to select dpi, image format or any other quality settings to scan the customer's documents. All the assistant has to do is tap and scan, and the documents are immediately sent to the proper destinations. Engineers receive the technical specs, the Environment, Health and Safety department receives the raw material assessment specs, and the product management team receives the documents to begin market assessment. Within seconds, the New Product Development Manager sees confirmation of the successful scan, including page types and total page numbers.

Taken together, fully automated data extraction, document type identification (with or without barcode), document deskewing and cleanup, blank page removal and double-sided scanning all speed the handling and processing of documents, increase the accuracy of assembled packages and eliminate delays and errors related to manual rekeying.

Accepting documents from any input source
A common scenario: The field engineer discovers the raw materials report is missing a signature on the release page. He emails the New Product Manager a request for the missing signature. Here, Nuance minimizes delay. Namely, the New Product Manager can simply take a photo or scan the missing document and email it back, either directly to the field engineer or to a one-time address that will append the new document to their in-process application.

Nuance captures documents from any input source, including scanner, email, fax, web forms and mobile devices. Regardless of the information's form, it can become part of the customer's application package.

Increasing speed and accuracy
Real-time product development documentation helps increase the speed of product development. Prototypes can be evaluated, and documented changes can be sent back to the engineers for review and fixes, expediting the decision-making process. Having captured and routed research, design

"Product design is more important than ever because in the twenty-first century, customers demand greater product variety and near-constant innovation. It is common for consumers to switch quickly to products with state-of the-art technology."

Encylopedia.com

specs, technical specs and quality data for the product development teams, Nuance solutions reduce the time needed to move a product from concept to launch. Timely, accurate, properly directed and electronic data reduce processing delays, contributing to faster time-to-market and increased margins.

Secure processes to protect intellectual property

Intellectual property must be protected to ensure competitiveness and increased product margins. With Nuance, manufacturers no longer have to worry about the costs, complications or risks of managing, accessing or securing their information. The platform builds security into every step of the document workflow, applying nine essential best practices for the secure and compliant handling of information captured, copied, output or shared on a networked MFP.

Require User Authentication

Security begins by controlling access to the control panel. Nuance requires users to verify their credentials on the device via PIN/PIC code, proximity (ID) or a smart card used to access documents containing protected information.

Restrict Access Based on User Authorization

Once users are authenticated, the solution applies rules and permissions to control what they can do on the MFP. Single sign-on network authentication is seamlessly integrated with document workflow to ensure optimal security.

Centrally Audit all Network Activity

Nuance centrally captures and stores a complete audit trail of all MFP and document activity. As a result, in the event of a data breach, you can easily identify which device was the source, who was the authenticated user and where the data was sent. Nuance also records all metadata passed through the system, enabling you to track any specific scan, print, copy or fax to a specific user or produce reports providing an overview of selected activities by device or department.

Encrypt data to and from MFPs

Leveraging accredited methods for both Data in Motion and Data at Rest, Nuance encrypts communications between smart MFPs and mobile terminals, the server and allowed destinations, to ensure documents are only visible to users with proper authorization. This includes Secure Sockets Layer (SSL) with up to 2048-bit encryption and FIPS 140-2 accredited Open SSL FIPS Object Modules on supported MFPs.

Only Release Print Jobs to Authorized Personnel

When documents are printed, Nuance prevents exposure of personal, sensitive or legally protected information by holding print jobs in a secure print queue and not outputting them until the employee signs in at the printer and selects the specific documents to output.

Implement Rules-based Printing

Nuance's print management platform allows businesses to build, implement and automatically enforce new or existing print policy rules to control print activity. Rules can define who may print which types of documents, when they may output them and where they can print. Managers can restrict printing based on user or group membership, source application, time of day and destination. Rules can also be defined based on the content of the print jobs.

Enforce Trusted Network Destinations
Nuance validates the information in scanned documents to automatically prevent them from being transmitted to unauthorized fax numbers, email addresses or even domains. For the tightest possible control, allowable destinations can be part of a specific user's predefined workflows, so they may only send documents to the recipients on an approved list displayed in the control panel.

Monitor and Control Personal Information Activity
Nuance provides a centralized approach to protecting information with advanced content filtering that examines and intercepts documents containing security classification keywords or sensitive data such as account or case numbers. Documents with content that should not be shared can be quarantined or deleted, and the document owner is automatically notified if such action is taken.

Standardize and Integrate Network Scanning
One common problem with traditionally configured office MFPs is that no two devices within an organization are set up the same way for document scanning. Nuance eliminates this shortcoming and simplifies workflows by standardizing the scanning process across an entire fleet of MFPs. With integrations that enable direct scanning into all major document systems, Nuance provides more security than scanning into network folders.

Productivity for the mobile business

Nuance mobile solutions make it easy for manufacturers to bring information, applications and collaboration tools to their mobile workforce. Employees can securely send documents, photographs and other electronic files from their smartphones or other mobile device to any number of company systems. Our solutions provide multiple ways for mobile workers to access, and work more efficiently with, the information needed to do their jobs.

Mobile capture on the go: Send information back into your business processes securely in multiple formats from any smartphone or mobile device.

Electronic forms: Any forms-based application can be delivered securely to remote employees. Data can be validated easily with document management or other line of business applications directly within the form.

Barcode scanning with lookup: Barcodes help businesses speed up work and improve data accuracy. Reading a barcode with their mobile device, mobile workers can pull accurate data right from the company's database to instantaneously populate electronic forms for almost any application.

eSignature: Mobile workers can capture and send signatures electronically from smart devices to quickly perform tasks, validate information and obtain approval.

Geo-tagging: Deliver a deeper understanding of the situation when you include geolocation information with mobile documents and photographs.

Secure File Access: Mobile workers can access the company network from anywhere. Nuance mobile solutions connect workers to their networked home directory, enabling secure access to their files and shared network folders.

Secure Mobile Print: Initiate print jobs from mobile devices and print them securely to any networked printer, regardless of location. Documents wait in a print queue until the mobile worker releases them by reading the printer's barcode with the mobile device.

Bidirectional database connectivity: Using simple lookup fields, users can retrieve information on customers, products or contractors from backend databases, then display this information on a tablet and update and index it in real time. In so doing, the time spent entering data and the chances of it being entered incorrectly are minimized.

Differences that matter

Nuance has years of experience helping manufacturers reduce the inefficiencies, costs and risks associated with paper-based processes. That is why we offer a complete solution enabling companies to securely capture, organize, publish and distribute information — not only in the office but everywhere documents must be accessed, output and shared.

To help customers contain their IT costs, the Nuance solution supports the largest number of hardware devices and backend systems in the industry. Integrating with existing software and systems, the Nuance solution simplifies deployment and helps customers leverage their existing technology investments. With its extreme ease of use, nondisruptive operation and transparent security and control, Nuance enjoys the highest rates of user adoption and satisfaction.

Manufacturers are overly dependent on inefficient and error-prone manual paper-based processes that interfere with efforts to grow top-line revenue, improve bottom-line profitability, maintain cash flow and boost efficiency and productivity. Nuance's intelligent document capture and workflow solutions transform manual, disconnected processes into dynamic, streamlined and automated workflows that help manufacturers increase operational efficiency, cut costs and manage cash flow more effectively.

About Nuance Communications, Inc.
Nuance Communications, Inc., is a leading provider of voice and language solutions for businesses and consumers around the world. Its technologies, applications and services make the user experience more compelling by transforming the way people interact with devices and systems. Every day, millions of users and thousands of businesses experience Nuance's proven applications. For more information, please visit www.nuance.com.

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