Workflow Automation

A Guide for CIFFA Members

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CIFFA

Contents

Introduction to workflow automation

CIFFA's Technology Committee has been considering for some time how to best provide value for members after issuing its first report, a look at the [top cybersecurity practices](#) for small and medium-sized businesses. This report is the outcome of that reflection.

As a primary tool used by companies to boost their efficiency, workflow automation became an increasingly obvious choice of technology to focus on. It's a technology that almost all companies might benefit from, scaled up or down depending on company size and needs.

Automating repetitive tasks has numerous positive results. It gives affected employees more time to solve problems and generate value, a benefit to all parties: the employer, customers and the employee. It reduces errors and inconsistencies and increases speed. It enables collaboration, improved communication and visibility. And it can lower the costs of day-to-day operations by reducing the resources required for task completion.

Another feature of workflow automation is its ability to offer employers KPI statistics to manage productivity. Especially in the post-pandemic world in which many employees work from home at least some of the time, employers need to know that work continues apace to meet business requirements.

In a marketplace that values speed and excellence in customer service, workflow automation can improve customer satisfaction. As more and more companies adopt technologies that promote this outcome, it's becoming a competitive imperative to do so.

In addition to examining the benefits of workflow automation, this report provides guidance on preparing for and implementing technologies. It also considers a potential downside of technology adoption: employees dealing with uncertainty about their jobs and fear of change, impacts that could offset productivity gains the technologies enable. Positive communication and support throughout the process are key to handling challenges of this nature.

In this paper, we have aimed to provide guidance to help CIFFA members understand the benefits of workflow automation and how to make it work for their companies. We have not made recommendations related to vendors or policies.

Strategy

Preparing for a workflow automation technology implementation

Workflow automation projects can significantly improve efficiency and productivity by streamlining business processes and reducing manual tasks. However, implementing such projects requires careful planning and preparation to ensure successful execution. Some factors that need to be considered for a successful workflow automation project are:

1. Identify the right people with the right skills: A successful automation project requires a team with a range of skills, including business specialists, managers and technical expertise. Ensure that you have enough people to handle the project and that they have the necessary skills to handle their responsibilities.
2. Employee education and training: Workflow automation projects can impact employees in different ways, and it's essential to communicate the benefits of the project to them. It's also necessary to provide adequate training to help employees learn new processes and tools and ensure that they are comfortable with the new system.
3. Technical support: Workflow automation projects require a strong technical foundation to be successful. When applicable, ensure that you have the necessary IT infrastructure, including hardware, software and network resources, to support any systems that will be installed on-premises. For Software-as-a-Service (SaaS) products, ensure the provider's support service level agreements match your expectations. Also, have a team in place to troubleshoot any issues that arise during and after the implementation.
4. Develop a project plan: Developing a detailed project plan is essential for successful implementation. This plan should include a timeline, milestones, resource allocation, risk assessment and contingency plans.
5. Define goals and metrics: It's crucial to define clear goals and metrics for the automation project. This will help measure the success of the project and identify areas that need improvement.
6. Testing and evaluation: Before rolling out the automation project, it's important to test the system thoroughly to ensure that it meets all requirements and specifications. Also, continuous evaluation of the system's performance is necessary to identify issues and make improvements.

When embarking on a workflow automation project, it is essential to set realistic expectations to avoid disappointment. Implementing automation takes time, especially when you consider the need for system integration, training and change management. Prior to initiating the project, establish realistic timelines and communicate them to stakeholders. Communicate with stakeholders, including employees and management, to ensure they understand the goals, benefits, limitations and risks related to the proposed automation project.

Defining project scope and requirements

A project's success depends on clearly defined scope and requirements, ensuring there is alignment with business needs among stakeholders, as well as cost and time efficiency. Scope considers the project purpose, objectives, features, competitiveness, outlining direction and goals from the outset. It establishes project focus, leadership, work inclusions and exclusions and required timing, and forms the basis for decision making throughout the design and development process. Business should consider the following to develop project scope and work requirements:

- Define business requirements, key objectives and expected outcome of the project, with a clear understanding of why the project was initiated. Include a statement of work (SOW).
- Define size and scope of project, to accurately estimate project timeline, budget, required skills and resources.
- Appoint a project leader, outlining team responsibilities and deliverables, to ensure focused work efforts by all.
- Properly identify stakeholders involved and user stories to be included, to understand the business process impacted and avoid any oversight.
- A project SOW will provide for enhanced communication with potential vendors, being specific with the purpose and outline of project requirements, to be included in an RFP.

Considerations in adopting new technologies

Application of new technology brings along a number of potential changes that affect how your company conducts its business. There are various important and crucial aspects to be considered before deciding what systems / technology to use that best fit your current and future needs.

Here are important points to consider when evaluating new technology applications and their implementation:

- Seek clarity: On user friendliness, process flows, performance visibility, interface capability.
- Return on investment: Adopting new technology is an arduous process that requires time, dedication and team commitment. Understand the cost benefits of the technology and how it affects your bottom line.
- Analyze options: List requirements. Is the new technology helping you to obtain your goals? Create a plan.
- Competitive advantage: Avoid being taken in by marketing hype, buzzwords. Eliminate unnecessary products. The technology should add value for both near and long term.
- Customer requirements: Know and understand your clients' access requirements A to Z (quotes, booking, tracing, billing, stats and so on).
- Envision present and future transformational impact: Consider new tech impact of cloud, freight management system/transportation management models, sales and marketing tools, AI, blockchain, interaction with existing network.

- Vendor selection: Look for vendors that are cost-effective and provide well-designed, proven solutions. The vendor should be known for its customer service excellence, support availability and continuous product improvements.
- Implementation criteria: Good project management from beginning to end is key to implementation success. Determine your starting point. Set a deadline, identify obstacles, consider data migration issues, staff training, user support, additional knowledge and skill requirements.

Five questions you should ask to verify value

Eighty percent of CIOs rely on vendors to help them quantify the value proposition of a solution. In fact, the ability of a vendor to quantify value is often a major factor in deciding which vendor to choose.

Chances are that you will rely on vendors to demonstrate the value of their solution. However, you shouldn't accept their claims at face value. Here are 5 questions you should ask to verify the value that is being presented.

Question 1: Are the benefits achievable?
Benefits are often presented as follows:

- Cost savings (reduced payments to third parties, lower unit prices, lower volume of consumption)
- Productivity gains (time saved per activity, reduction in total activities, shorter time to close deals)
- Revenue growth (more leads, better conversion of leads to deals, larger deals, more deals closed, higher customer retention rate)
- Risk mitigation (fewer problems, reduced penalties/fines, fewer hits to your firm's reputation)

Make sure that the vendor is able to quantify revenue and expenses for both the before and after implementation scenarios specific to your firm and your situation. Don't accept numbers based on someone else's experience. By insisting that the vendor use your numbers, you are introducing an element of accountability.

Ensure that the vendor doesn't assume that you are willing to take actions (for example, laying off staff) that will not happen.

Finally, consider how hard it might be to realize the benefits. For example, assuming a 10% gross margin, it will take $10 of additional revenue to recover $1 of expense ($10 of revenue x 10% gross margin = $1) while it will take only $1 of expense reduction to offset that same $1 spent on the implementation.

Question 2: Has the vendor captured all costs?
Here is a quick check list of the costs you may incur. Use the checklist to see if the vendor missed anything.

- Hardware (upgrades and new)
- Software licences (one-time/subscription) for the vendor's solution and any pre-requisites
- Time spent gathering information

- Consulting
- Project management
- Setup/configuration
- Data loading/migration
- Testing
- Downtime
- One-time and ongoing training (costs from the vendor plus the cost of employee time spent on training)
- Ongoing support
- Upgrades
- Increased costs for future hires (licences, training, etc.)
- Anything that the vendor expects from you (make sure you get the list of expectations up front)

Question 3: Have all risks been identified?
What if:

- Costs are higher than expected?
- Benefits take longer than expected to accrue?
- Return on investment expectations are not reasonable or feasible?
- Your employees resist the change?
- Adequate qualified resources have not been assigned by both the company and the vendor to implement the project and/or may not be available if the project extends beyond the expected deadline?
- Your customers don't like the new system?
- The project suffers from scope creep?
- Important information is not available?
- The implementation fails?

Has the vendor been able to show you (based on the benefits that are achievable and all of the expenses) how long will it take to break even (payback period)? Remember that the longer the payback period, the greater the risk. Make sure the vendor has presented expected cash flows, in detail, for at least a three-to-five-year period. *(Pro tip: Include the time value of money – Spending $100 today does not equal receiving $100 in a year's time. At the very least, you may be able to invest that $100 at 5% and get $105 back in a year. So, $100 today = $105 in a year.)*

Question 4: What is the cost of doing nothing?
Often referred to as the status quo, these are the revenues and expenses that will occur in the future if you decide not to proceed. It should not be confused with 'everything will continue as it is now'. Just as you considered risks associated with the implementation, you must also consider what might happen if you don't do anything. Could you lose deals, lose customers, or face increased costs?

You should also consider the impact of delaying implementation by six months or a year. Is there a point at which you will have to move forward?

Question 5: Are there better ways to achieve the same outcomes?
Is the vendor's solution the only way to achieve the identified outcomes? Are there other vendors who could deliver the same outcomes but in a different way? What would happen if you hired more staff,

upskilled your existing staff, or subcontracted? What would the associated benefits/costs/risks look like for alternatives?

Where the costs/benefits/risks are ones you have identified as significant, take the time to answer the questions in detail to ensure you make the right decision and avoid any unpleasant surprises.

Automation versus offshoring

This paper focuses on automation using technology. But what about offshoring? It has become quite common for logistics service providers to shift labour intensive work to low-cost labour markets. This can yield significant cost savings. However, there are several reasons automation is often a better solution.

Long-term cost savings: Although automation may require higher upfront investment, in the long run, it can lead to greater cost savings by reducing the need for manual labour, minimizing human errors and lowering overtime expenses. Outsourcing to low-cost labour markets might provide immediate cost savings, but wage inflation and other operational costs may increase over time.

Quality and consistency: Automation ensures that tasks are performed with high levels of accuracy and consistency, reducing the likelihood of errors and improving overall quality. In contrast, outsourcing to low-cost labour markets may be subject to varying levels of quality, as it relies on human labour and potentially different work cultures.

Intellectual property protection: Automating processes within the company allows businesses to better safeguard their proprietary information, trade secrets and intellectual property. Outsourcing, on the other hand, can expose sensitive information to third-party vendors, increasing the risk of data breaches or theft.

Improved scalability: Automated systems can be quickly scaled up or down according to business needs, allowing for more flexibility and adaptability in response to market fluctuations. Outsourcing may require renegotiating contracts and adjusting vendor relationships, which can be time-consuming and less flexible.
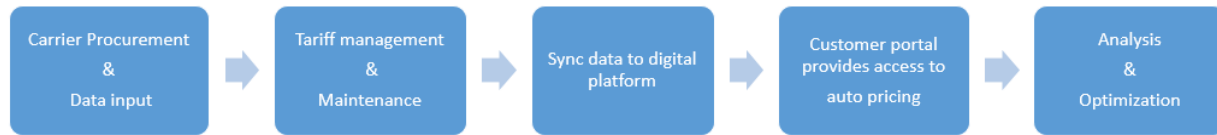
Enhanced customer experience: Automation can lead to improved tracking and visibility of operations, enabling businesses to provide better customer service and real-time updates on orders or shipments. Outsourcing may introduce communication barriers or delays in response time, potentially impacting the customer experience.

Greater control: Automating processes internally allows businesses to maintain greater control over their operations and decision-making. Outsourcing can lead to a loss of control, as businesses become reliant on third-party vendors and may need to adapt to their processes or limitations.

Technological advancements: By adopting automation technologies, businesses can stay on the cutting edge and maintain a competitive advantage. Outsourcing to low-cost labour markets may not offer the same opportunities for innovation and technological growth.

Technologies

Freight rate management system

Carrier Procurement & Data input	→	Tariff management & Maintenance	→	Sync data to digital platform	→	Customer portal provides access to auto pricing	→	Analysis & Optimization

Freight rate management systems are software tools designed to assist transportation-focused companies in managing shipping rates and optimizing operational efficiency. These rate systems offer a wide range of features and benefits, from data collection to analytics that streamline global tariff management processes across various products and services, creating a solid foundation for automated quotation platforms.

In today's rapidly evolving business landscape, transportation providers seek to simplify their overall pricing cycle, from procurement to quotation and operations. Rate management has become a critical component of the global logistics process, leading businesses to adopt digital solutions that not only optimize internal rates but also cater to customers' needs by providing timely quotations across various modes of transportation. When properly implemented, these systems allow real-time access to rate data and minimize the possibility of mistakes or discrepancies caused by complex manual processes across multiple data sources.

In addition to considering system implementation and ROI, business managers and process owners must carefully evaluate system integration before onboarding a new freight rate management system. To ensure successful adaptation, companies must verify the compatibility of their existing logistics systems to ensure seamless connections across all aspects of their business operations.

Based on the freight rate management system discussed above, let's explore some key features and benefits that could create value for your organization.

Key features and benefits

Rate management

A centralized freight rate management system allows for:

- Collecting rate data from multiple sources including tariffs and contracts
- Managing freight rates and routing details across various services
- Making informed decisions about carrier selections and modes of transportation
- Helping streamline operations and minimize errors and rate discrepancies

Automated quoting

Automated processes can reduce the time and resources required for manual rate management and improve efficiencies. The ability to compare rates from multiple carriers and shipping modes can help users select the most cost-effective shipping options for each shipment, reducing overall transportation costs. Instant quotes on digital platforms enable:

- Real-time access to the most up-to-date pricing information
- Business continuity 24/7, 365 days
- Mobile accessibility and flexibility

Analytics and reporting

Freight rate management systems can provide powerful insights that lead into performance and optimization opportunities, allowing service providers to:

- Track and analyze freight rates
- Identify market trends to make data-driven decisions that ultimately improving profitability and customer satisfaction
- Provide visibility into the overall rate management processes, therefore prevent revenue leakages caused by any deviations of non-standard manual processes

Document management

Effective document management is indistinguishable from information management and, when improved, can contribute to productivity and redistribution of operational costs and offer better governance over information. It requires a systematized approach to information organization that establishes information centralization, accessibility and accuracy. Effective document management takes periodic maintenance and evaluation of current information practices to ensure the current system is meeting the needs of the organization. As an organization becomes more sophisticated so will the requirements around document management.

A document management system (DMS) can provide several benefits that significantly impact an organization's efficiency, productivity and overall operations:

- Improved accessibility: A DMS allows employees to access documents from anywhere, at any time, facilitating remote work and improving flexibility. This is especially crucial in the age of digital transformation and remote working trends.
- Efficiency and productivity gains: With a DMS, time-consuming processes like searching for, retrieving and sharing documents can be completed in seconds, significantly improving operational efficiency and boosting productivity.
- Cost savings: A DMS reduces or eliminates the need for physical storage, leading to savings in terms of space and associated costs. Additionally, the efficiency improvements can lead to indirect cost savings by reducing the amount of time employees spend managing documents.
- Enhanced security: A DMS provides robust security features like access controls, versioning, audit trails and encryption, ensuring that sensitive documents are protected against unauthorized access or loss.
- Better compliance: With increased regulation around data management and privacy, a DMS can help maintain compliance by ensuring documents are properly stored and accessible and can be easily tracked and audited.
- Streamlined collaboration: A DMS makes it easier for teams to collaborate, even if they're geographically dispersed. Multiple users can view and edit documents simultaneously, with changes tracked and synchronized in real time.
- Disaster recovery: In case of a disaster, a DMS provides an extra layer of protection by having documents backed up and easily recoverable, thereby ensuring business continuity.
- Environmental sustainability: By reducing the need for paper-based document processes, a DMS can help an organization reduce its environmental footprint.
- Document management system (DMS) solutions exist to remedy many of the challenges that come with scaling information management. Some of the common challenges include document findability and retrieval, document centralization, document versioning and offline workflows.

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Document findability and retrieval
A well-organized information hierarchy makes it easier for users to find what they need quickly and efficiently. This in turn saves time, increases productivity and reduces the likelihood of errors or misunderstandings.

A flexible DMS or transportation management system (TMS) can allow users to organize and store large amounts of information in a structured and findable manner. Documents can be associated and grouped by metadata to increase organization and findability. This metadata can then be filtered, sorted and searched on to aggregate offline workflows based on specific criteria.

Document centralization

Keeping documents in a central location is a good practice that can sometimes be challenging to achieve. The difficulty stems from the creation of documentation from different external sources. For example, if shipping agents are sending documentation through email, the recipient has to proactively follow a multi-step process to get the said document into the document system to be filed. By developing a centralized documentation system, organizations can create visibility and accessibility amongst staff which in the long term can be very beneficial. This type of practice can promote a self-serve environment that makes it easier to build processes around.

Document versioning

Modern systems allow for document versioning to allow multiple parties to simultaneously collaborate on the same document. This aims to improve information governance and accuracy. Traditionally, if multiple parties need access to the same document or information, many copies of the same file are created. This inherently leads to having multiple working versions of the same file which can be challenging to manage. Often this method of collaboration produces challenges of not knowing which is the "final" version, ultimately requiring an information merging effort to ensure the latest of all versions are aggregated into the final copy.

In situations where variations of the document need to be recorded separately, document versioning allows for the numbered versions to be generated from the original document. This makes it easy to toggle between said versions. At the end of the collaboration an automated merging workflow can merge changes between all versions eliminating some of the manual labour required by the traditional approach.

Offline workflows

Workflows are the process links that interconnect staff and departments. They allow us to build reliable, predictable and scalable processes. These processes are the first to be automated since they consistently follow the same rules and don't typically rely on complex branch logic to fulfill. Many of your offline processes can be converted into automated workflows given the toolsets of today's TMS/DMS. Automating workflows can further increase productivity, reliability and potentially free up human resources from mundane tasks.

Popular offline workflows that are great for automation typically have fewer than 4 process steps. Often today's systems come with out of the box workflow templates that only require slight modifications to cater to your exact process.

Another type of workflow automation that is becoming more popular is optical character recognition (OCR). It allows systems to read and interpret document text and can then take action based on its interpretation. OCR technology has gained traction within accounting departments. Company payables are often scanned through the technology and added directly into an accounting system for human approval. By automating this process, the system saves time by removing the need for human data entry ultimately reducing chances of error.

Based on the features and remedies listed above you can see the advantages of adopting a document management system. These systems are designed to help with the most common challenges of scaling your information management practices around document findability, centralization, versioning and automating workflows. Unfortunately, this technology is often not sold as a standalone product but is instead packaged within specialized tools (i.e., transportation management systems and/or ERPs) or product suites. Fortunately, some of the most popular DMS are affordable for small to medium-sized transportation companies and are bundled in the office productivity tools already procured.

Freight payables automation
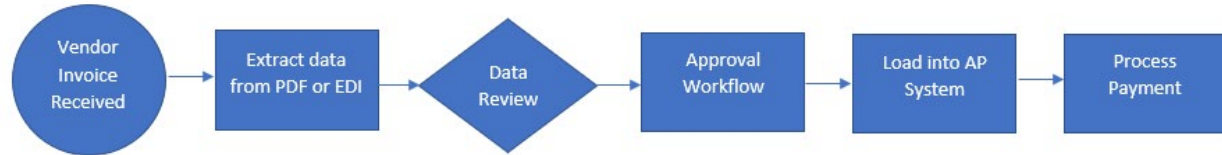
Transportation providers serve as the financial hub for most freight transactions. Their ability to effectively manage freight costs and payments is critical to optimizing cash flow and financial health. Payables automation services can help CIFFA members improve their business by streamlining their payment processes, reducing errors and fraud, and enhancing their relationships with suppliers and carriers. Payables automation services use software and technology to automate the creation, approval and execution of payments. They can also provide real-time visibility into the status of payments, invoices and balances.

There are many well-established service providers that specialize in payable automation. Here are how these services usually work. Any incoming invoices from carriers, truckers, warehouses, terminals, etc. are forwarded to the payable automation provider. The invoice format could be an EDI message, a PDF invoice attached to an email, or even a scan of a paper invoice. The provider then uses data engineering techniques like optical character recognition (OCR), data transformations and sometimes machine learning to convert the source invoice into structured data that can be more easily consumed by the customer's transportation management system (TMS). Usually, the service includes data mapping capabilities which support linking master data like organizations, locations, or charge codes from the source invoice to data elements that the TMS will understand. Additionally, it is necessary to associate the invoice with a particular shipment or job in the target system, which can require various kinds of lookups against the database. The invoice data is then uploaded into the TMS and/or financial system as an estimated cost, vendor invoice, payment, etc.

The labour savings from automatically processing payable data can be significant. Manually entering vendor invoice details into the accounts payable system is tedious and time consuming for a company's finance team. Validating vendor charges against tariffs and estimated costs also requires time consuming research and coordination across departments. Given the large volume of incoming payables invoices from carriers, warehouses and truckers, reducing this data entry and research work can be a big win.

A common challenge with payable automation projects is exception management. As we all know, amounts invoiced are not always accurate and require verification and approval. Prior to an automation project, most companies would have implemented various workflows to check the validity of vendor invoices prior to payment. Usually, these workflows involve checking the invoice against expected charges according to the vendor's tariff. Often specific tolerances are set up that define when a cost variance needs to be further researched or approved. When handled manually, this audit and approval workflow can consume a large amount of labour across multiple departments. Most payables automation providers include tools to track the lifecycle of these this kind of exceptions. They often support configurable rules about what constitutes an exception. Also, they may provide reporting, dashboards and task lists to help the company manage the lifecycle of a payable exception.

When processing financial data, accuracy is paramount. Inaccurate OCR or data mappings can lead to serious financial errors if not noticed by the finance team when loaded. This is why many providers offer human-in-the-loop workflows. In this model, the service probabilistically determines the confidence level of the data and involves humans when review is required. This allows high-confidence data to pass through a fully automated channel, while triggering a manual review for lower-confidence data. Then a human can fix errors or data mappings and release the invoice for loading into the TMS. Some providers use these human interactions as training data for machine learning models. Over time, these models can recognize patterns in the human corrections and gradually increase confidence levels, reducing the portion of transactions requiring human review.

Most payable automation providers offer pre-built integrations with popular TMS and financial systems. This can reduce the implementation cost and time frame. However, it's important to consider how master data mapping and exception management will be handled when considering the integration. Several interfaces may need to be set up between the automation provider and the customer's software to facilitate these processes.

CIFFA members could enjoy many business benefits from payables automation solutions:

- Faster and more accurate payments – Payables automation can reduce the labour required to process payments, as well as eliminate manual errors and discrepancies. This can improve the accuracy and timeliness of payments, which can boost the company's reputation and the trust of suppliers and carriers.
- Cost avoidance – Automating the review and approval of incoming invoices frees up employees to spend more time reviewing exceptions and developing supplier relationships. This can increase the capture rate of incorrect charges and alert the company earlier about unexpected or increasing charges.
- Improved cash flow – Payables automation services can provide companies with more visibility and control over their cash flow. They can help them optimize their payment terms, negotiate discounts and access financing options. They can also help them manage their currency exposure and hedge against exchange-rate fluctuations. This can help companies improve their liquidity and profitability.

Given the large number of payable transactions a typical company processes, payable automation tends to be a very popular business process to automate. Significant productivity gains and financial impact can be achieved with these projects. However, most businesses will need to overcome implementation challenges to achieve these gains. Freight cost processing affects multiple departments within a typical operation which requires alignment and coordination. Sometimes the existing process must be completely re-engineered to deliver the expected value. But rationalizing existing payment processes and redesigning a tech-enabled process will typically yield big wins.

Other automation technologies

Many technology providers are offering solutions to help businesses automate their operations. We have addressed many of these in detail in this document, and also want to list additional technologies worth looking into.

Robotic process automation

Robotic Process Automation (RPA) is a type of software technology that automates manual and repetitive business processes by using robotics to simulate human-digital interactions. RPA software programs are designed to follow a set of rules and guidelines when performing tasks, which ensures execution in a consistent manner. These rules can be customized and configured based on specific business needs. RPA is particularly useful for integration with legacy systems that do not offer integration interfaces like APIs. Some examples of tasks that RPA can automate include data entry, shipment status tracking, invoicing and documentation preparation. RPA is becoming increasingly popular because its ability to save time, reduce costs and automate workflows without extensive IT assistance or major changes to an organization's IT infrastructure. It is usually designed with user-friendly interfaces and visual mapping tools that allow non-technical users to master and build workflows. Automating repetitive and time-consuming tasks can help businesses increase throughput while achieving high accuracy and precision.

Email automation

Logistics-related companies expend a large amount of labour processing and responding to emails from customers, suppliers and overseas partners. Types of emails include bookings, prealerts, quote requests, shipment status requests, status updates, and coordination with carriers, trucking, warehouses and terminals. Some technology providers offer the capability to ingest emails, classify them by the sender's intent, correlate them with records in the TMS and, in some cases, automatically respond. For example, it may be possible to extract the details from an emailed quote request, use those fields to generate a quote in the TMS and automatically reply to the sender with a completed quote.

Some services specialize in classifying email attachments by document type (like arrival notice, bill of lading or commercial invoice) and attaching them to the correct record in the TMS. Some even extract unstructured data from the attachments to reduce data entry. For example, they might parse an arrival notice and load the cargo location and availability date into the TMS.

Chat bots

We have all seen chat bots as a customer service channel and some providers offer this capability for industry-specific use cases. For example, a chat bot may allow a customer to ask for shipment status on a particular bill of lading. The chat bot then looks up the shipment in the TMS and responds with the last completed milestone and the estimated delivery date.

Sales and marketing automation

Many businesses invest heavily in sales and marketing so it can be beneficial to use automation services in this area. Most CRMs have integrated or add-on automation capabilities to identify and classify leads, manage content marketing campaigns, or optimize handling of support requests. Some interesting uses of generative artificial intelligence models like GPT-4 are emerging in the sales and marketing arena. For example, generative AI may help a salesperson compose outreach communications or generate content on social media platforms to generate leads.

Visibility providers

Various visibility providers have emerged that can aggregate shipment milestone data, GPS location and predicted ETAs. These providers usually offer a web portal that allows a company or its customers to track their shipments across all modes, carriers and lanes. Usually, it is possible to ingest this data into the company's TMS, which can yield significant labour savings and improved data quality. Although visibility services are not technically an automation service, they can indirectly result in huge productivity gains for operations staff. Instead of constantly checking for status on carrier and terminal web sites, the data can flow directly into the TMS and involve humans on an exception-basis.

Implementation

Workflow automation initiatives can profoundly influence current processes, employees and software systems. Therefore, at the outset of such an implementation, it is crucial to strategically outline how the new technology will integrate into the organization's pre-existing ecosystem. This involves designing a future state that seamlessly incorporates all the new technology. This step is essential to fully harness the projected business benefits of the automation project.

Effective project management practices are indispensable when handling the changes that new technology may introduce. It's crucial to establish clear project objectives that resonate with the organization's strategic goals, and these must be transparently communicated to all stakeholders. For projects of considerable complexity, crafting a comprehensive project charter is advantageous. This document delineates the project's scope, objectives, anticipated costs, potential risks and necessary resources.

A competent project manager should be appointed to ensure the project's successful execution. This person is held accountable for project delivery and should regularly inform stakeholders about the project's progress. Additionally, the project manager oversees the distribution of team resources and gives priority to critical project tasks.

It's equally important to maintain robust risk management practices. This involves systematically documenting potential risks and developing corresponding mitigation strategies. Once the project concludes, conducting a thorough post-project review is highly beneficial. This process identifies successful strategies and areas needing improvement, acting as a pivotal step towards continuous advancement and augmenting the chances of success in future projects.

Impacts on business processes

The unsuccessful implementation of new technology within a workplace can frequently be traced back to a misalignment between the technology and the company's specific needs. This mismatch often occurs when the software's features don't precisely correspond with pre-existing processes, primarily because the technology is not custom developed for the organization or specific use case. Rather, it is designed with a semi-flexible architecture that approximates existing processes.

It's important to acknowledge that no off-the-shelf software will align perfectly with your business operations, and the success of implementation largely hinges on its users. Garnering group consensus, or as close to it as possible, significantly boosts the likelihood of success.

To truly benefit from automation, companies may need to completely re-engineer related business processes. A lack of holistic thinking about how automation tools fit into the end-to-end value stream can lead to sub-optimization or unintended side effects. Automating specific tasks often requires improvements and fixes to existing systems and processes.

In our industry, productivity has emerged as a vital element, fundamentally underpinned by the goal of minimizing keystrokes. Most contemporary operating systems offer some form of workflow automation to assist in this objective. In the wake of the pandemic, many companies have embraced remote or

hybrid work arrangements. Now more than ever, employers rely on key performance indicators (KPIs) to manage their business and monitor employee productivity. Metrics such as Files per Full-Time Employee (FTE), Gross Profit (GP) per File and GP per FTE are insightful. Modern operating systems can generate a multitude of KPIs to assist with daily business management.

Impacts on employees

A workflow automation project can have various impacts on employees, both positive and negative. The effects can depend on various factors, such as the nature of the project, the size of the organization, current work processes and the level of employee involvement in the project. Some potential impacts of workflow automation projects on employees relate to:

1. Change management: Workflow automation projects can bring significant changes to an organization's work processes, which can be challenging for employees who have been performing the same tasks manually for years. It's important to involve employees in the project and communicate the benefits of the automation to help them understand and accept the changes. If employees have not been engaged in discussions to ensure they understand why the company is implementing new technologies and what the expected outcomes of that implementation will be, they will struggle with uncertainty about the future of their jobs. They may look for work elsewhere, hoping for more security. If not that, they will likely at least lose some commitment to or passion for their jobs. This does not make for a happy, productive workforce.

2. Consolidation/optimization of duties: Automation can eliminate repetitive, mundane, and time-consuming tasks, freeing up employees to focus on more strategic and value-added activities. This can lead to consolidation and optimization of duties, where employees may need to take on new responsibilities and roles. Ultimately, this may allow employees to focus on more engaging and fulfilling work, which can increase job satisfaction as they utilize their creativity, critical thinking and decision-making skills more frequently. Further, by accelerating tasks, automation allows employees to achieve more within a shorter time span. This efficiency can cultivate a sense of accomplishment and satisfaction. Given that an important intended outcome of automation in many cases is to free up employee time for value-added activities, many employers plan to maintain staffing levels after implementing workflow automation technologies for the employee's benefit.

3. Development opportunities: Automation projects can create opportunities for employees to learn new skills and develop their careers. Employees can be trained on new tools, technologies, and processes. In addition, the adoption of automation tools often enhances collaboration within teams. These tools come with features designed to streamline teamwork, leading to improved relationships and a more enjoyable work environment. These outcomes can enhance job satisfaction, open up new career paths and increase employee value to the organization.

4. Resistance to change: Some employees may resist the changes brought about by automation projects, either due to fear of job loss or lack of understanding of the new system. It's important to address these concerns and provide adequate support and training to help employees adapt to the new processes.

5. Improved talent acquisition: By streamlining repetitive tasks, improving efficiency, and enabling new opportunities, companies can create an appealing work environment for top talent.

Automating routine tasks can make the work environment more engaging and fulfilling and less stressful. Further, some types of automation, such as automated reporting or AI-powered analytics, can reduce the amount of work employees need to carry out outside of normal hours. This shift can significantly improve work-life balance. All of these factors provide businesses with a competitive advantage in the labour market.

To minimize negative impacts and maximize the benefits of automation, it's essential to involve employees from the beginning of the project, provide adequate training and support, and communicate the benefits of the automation to them. When applicable, messaging should be clear that the intended outcome is to eliminate unnecessary tasks, not jobs.

However, where jobs become redundant, employers can equip employees with the training they need to take on other roles. Where that is not an option, layoffs may be required.

If that is an expected result of technology adoption in your workplace, employees that will be affected should be informed as soon as possible and given the support they need to move on. Open communication and meaningful HR support to assist the employees in finding and securing new jobs will help boost the morale of all employees – both those who are staying and those who are not.

Integrating with existing software

Workflow automation technology almost never operates in a vacuum. It will be necessary to integrate with existing systems including transportation management systems, warehousing systems, financial systems.

Integration challenges are a common obstacle during automation implementation. For instance, a TMS or financial system may not be designed to handle automation workflows without a great deal of customized programming. A legacy software application may have limited or outdated documentation. This can make it difficult for the vendor to understand the system's functionality, data structures and dependencies, complicating the integration process.

While many automation services offer well-documented APIs and pre-built integrations with leading logistics applications, there may be basic logical differences with existing apps that need to be addressed. The timing, batch size and change frequency of incoming data might be challenging for existing apps to handle. Master data, like organizations, locations, or event types, needs to be mapped into codes that the application can understand. These challenges can add unexpected complexity to the integration project.

To ensure successful integration of the new technology, the following actions are suggested:

- Needs assessment: The first step is to understand the need for integration. What problems are you trying to solve? What are your business goals and how does the integration support them?
- Define requirements: Based on the needs assessment, define the specific requirements of the integration. This could involve technical requirements (e.g., data synchronization, user access controls), functional requirements (e.g., real-time updates, report generation), or business requirements (e.g., improved efficiency, reduced costs).

- Choose the right technology: Evaluate and select the appropriate integration technology. Factors to consider might include compatibility with existing systems, scalability, cost, vendor support and security features.
- Plan the integration: Develop a detailed project plan that includes the scope of the integration, tasks to be performed, resources required, timeline and responsibilities. The plan should also include a risk assessment and mitigation strategies.
- Design the integration: Based on the requirements and the selected technology, design the integration architecture. This will outline how the different software systems will communicate and interact with each other.
- Develop and test: Build the integration based on the design. This includes configuring the software systems, writing any necessary custom code and setting up data mappings. After development, conduct thorough testing to identify and fix any bugs or issues.
- Training: Train the users on how to use the integrated systems effectively. This could include end-user training, administrator training and training for the IT team on how to support and maintain the integration.
- Deployment: After successful testing and user training, deploy the integration in the live environment. It's often beneficial to have a phased deployment, starting with a small group of users before expanding to the whole organization.

Exploring new opportunities through implementation of automation

As the transportation industry continues to evolve, it is crucial to consider the potential opportunities that may arise due to the implementation of automation technologies. Software advancements in the realm of integrations are allowing for increased communication between platforms. An automation system implemented today might eventually integrate with other systems that you are currently using, as well as with those of your suppliers and vendors.

Incorporating automation can lead to new business opportunities by enabling companies to work with a broader range of suppliers and vendors who may have stricter software compliance requirements. By ensuring compatibility and seamless communication between systems, organizations can gain efficiency, strengthen partnerships and expand their network of collaborators.

When evaluating software solutions, consider asking the following questions to ensure that the technology can adapt to future changes and enhance compatibility with suppliers and vendors:

1. Which systems can the software currently communicate with?
2. Are there plans to expand integration capabilities in the future? If so, with which platforms and what is the expected timeline?
3. Can the software integrate with any specific applications you are currently using? List them all, even if their integration may not seem immediately relevant.
4. Are there plans to phase out any current integrations?
5. Have you checked with your main suppliers and vendors to ensure compatibility and explore possible efficiencies gained through direct system connections?

Addressing these questions becomes even more critical if you are contemplating making further changes to your current systems. By exploring potential opportunities and taking a forward-looking approach, you can make informed decisions that not only address your present needs but also anticipate future requirements and foster stronger business relationships. This proactive strategy may lead to a situation where accelerating the implementation of other changes becomes advantageous.

Summary

This paper is intended as a general guide for CIFFA members as they determine their workflow automation needs and select technologies to best address those needs. The flow of the paper is intentional: We encourage anyone going through this process to start with a strategic overview and plan before making decisions on technologies. Without a firm understanding of the gaps, you need to fill and the resources you have available, choosing an appropriate solution and implementing it successfully will be challenging, if not impossible.

Technology implementations are in themselves challenging, but don't let that deter you from taking the important steps your company needs to follow to remain competitive in an increasingly digitalized industry. As well as improving efficiency and data accuracy, the effort will almost certainly allow employees to add value to operations and service to customers.

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This report was planned and written by the members of CIFFA's Technology Committee.

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