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Mondelēz International's Intelligent Automation Journey:

From Cost Savings to Value Creation

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Mondelēz International's Intelligent Automation Journey: From Cost Savings to Value Creation

The promise of automation is often seen as improved productivity and cost savings – and these were certainly top priorities for Mondelēz International Inc. when it looked for ways that technology could fine-tune operations. But as the global snack foods company has found, automation can lead to more than better margins. When coupled with intelligence, automation can also support transformation and unleash growth.

Mondelēz International is one of many enterprises that have seen the potential in robotic process automation (RPA); over the past three years, the technology has taken the business world by storm. It uses software programs, bots, or drones. These technologies have the ability to deliver predictive analysis, provide reach, and enable data analysis where it is difficult for humans to get to. They can automate rote tasks previously done by humans, thereby enabling deployment of employees to higher-value work.

RPA is only a first step in the path to intelligent automation, which includes emerging technologies like natural language processing, machine learning, and artificial intelligence (AI). Nevertheless, it's a critical first step because it lays the foundation upon which more sophisticated AI is built, which is why corporations are embracing it as part of their digital transformation strategies. Gartner forecasts global spending on RPA software to reach \$2.4 billion by 2022¹. By the end of that year, it predicts that some 85% of large organizations will have deployed it.

Mondelēz International, which has \$26 billion in revenue and some 80,000 employees, is one of them. The company is a descendant of marriage and divorce among many-storied snack makers. These include Kraft, which started as a cheese company in 1909; National Biscuit Company (Nabisco), founded in 1898 when several U.S. regional bakeries combined; and Cadbury, whose namesake, John Cadbury, started selling tea, coffee, and drinking chocolate in 1824 in Birmingham, England. Name a favorite cookie or cracker, and there's a good chance Mondelēz International makes it. In fact, it makes the best-selling cookie in the world, the iconic Oreo, invented in the United States in 1912.

Mondelēz International was born in 2012 when Kraft Foods Inc. split into two companies: Mondelēz International and Kraft Foods Group (which later merged with Heinz and became Kraft Heinz).

¹ "Gartner Says Worldwide Spending on Robotic Process Automation Software to Reach \$680 Million in 2018," Gartner, Inc., Nov. 13, 2018.



“Very quickly, we saw growth opportunities where we could leverage robots and cognitive capabilities to increase revenues.”

RETO SAHLI, Global Intelligent Automation Program Lead

The new company initially adopted a cost-cutting strategy to improve profit margins. In 2014, it hired Caroline Basyn to build a global business services organization that would centralize and standardize processes and functions that resided in different locations around the world. Harmonizing these was intended to provide economies of scale and eliminate costly redundancies.

The first part of the plan was “lifting and shifting” processes from the company’s various locations into Mondelēz International Information Business Services (IBS). Over the next three years, the work of 5,000 full-time equivalents from eight different service areas were moved into the IBS, says Basyn, senior vice president, IBS.

Thinking Bigger, Seeing Opportunities for Growth

In 2017, Mondelēz International hired a new CEO, Dirk Van de Put. In late 2018, the company announced a new growth-focused strategy, spelling out three priorities: (1) accelerate consumer-centric growth, (2) drive operational excellence, and (3) build a winning growth culture. Cost reduction would continue, but the company’s focus shifted to increasing revenue by improving operations, distribution, and customer service.

Centralizing and harmonizing processes and functions had delivered substantial cost savings. But by 2018, it was time to think bigger.

“At first, the project had been pretty tactical,” says Reto Sahli, global intelligent automation program lead for Mondelēz International. “But, as we built our Center of Excellence and developed all the methodologies, concepts, tools, and governance, we started realizing this could be way, way bigger. Very quickly, we saw growth opportunities where we could leverage robots and cognitive capabilities to increase revenues.”

Mondelēz International also realized that some of the processes in certain locations that weren’t practical to centralize in IBS — such as scheduling direct store deliveries — could still benefit from automation. In these locations, local leaders were in the best position to decide which processes would benefit from automation.

The Intelligent Automation Journey

For enterprises with sights set on transformation through intelligent automation, laying the foundation can begin with robotic process automation. RPA enlists and trains software bots to automate rote, administrative computer tasks. As the organization moves forward with AI, including machine learning and natural language processing, RPA bots can be integrated with these cognitive technologies to help power digital transformation.

“We started to think about what kind of model we could use to help these locations without moving those processes into the IBS,” says Basyn.

Basyn and her team discussed possibilities with several cloud service providers. The team wanted a turnkey solution that included infrastructure, software, support, and maintenance. Because RPA and intelligent automation involve emerging technologies, Mondelēz International chose a company that would not only be a service provider but a true partner in developing cloud-based “robotization as a service.” Mondelēz International wanted a partner willing to put skin in the game. “Our managed service provider is investing heavily into building this for us,” says Sahli.

Next, Mondelēz International developed metrics by which it would judge the success of its pilot projects. Overall, the goal was to retrieve an ROI of 3-to-1. The investment piece, in direct cost, was straightforward.

Mondelēz International looks for ROI returns across five dimensions:

1. Synergies.
2. Cost avoidance.
3. Revenue growth.
4. Increased compliance.
5. Improved experience (for internal stakeholders, suppliers, customers, and consumers).

“Wherever we thought there was opportunity that could be codified and leveraged by automation, we invited those people to these digital safaris.”

CAROLINE BASYN,
Senior Vice President, IBS



“Our contract with the provider is basically like an itemized price list. There are low, medium, and high automations, each with a price tag,” Sahli explains. “So once you know how many automations you’re going to do (e.g., how many bots ordered from the provider’s menu) and the complexity rating for them, you know your recurring operating cost.”

Piloting Automation for ROI

In mid-2018, Basyn and Sahli held a series of brainstorming meetings around the world. These sessions included managers from selected functions and divisions. “Wherever we thought there was opportunity that could be codified and leveraged by automation, we invited those people to these digital safaris,” says Basyn.

One meeting was in Milan, Italy. Groups from North America, Europe, and Latin America focused on procurement processes, specifically order to cash and source to pay. Order to cash is a set of business processes for receiving and processing customer orders for goods and services and their payment. Source to pay is the entire end-to-end process involved in procurement — spanning spend management, strategic sourcing, purchasing, and accounts payable. Among the attendees were managers from Wilkes-Barre, Pennsylvania, representing the Customer Engagement team, which supports the company’s North American business.

During the meetings, the groups looked for areas crying out for automation — those where it would have the biggest impact.

However, need was not the only criterion. The extent to which a group was enthusiastic and hungry for innovation was considered, Sahli notes. “Some geographic organizations or functions are ready now, while others have different priorities,” he says. “The first time I talked to sales about intelligent automation, they said they had neither the capacity nor the time for this. It was not a priority for them.”

Wilkes-Barre was ready. “North America is one of our biggest markets, and they had a huge appetite for automation. Culturally, they were completely there,” says Sahli.

Another criterion was a division’s willingness to eventually fund the projects themselves. Although the Center of Excellence helped with initial seed funding, the goal was to transfer financial responsibility to each project quickly. Each project was to pay for itself through one or a combination of the five dimensions, from synergies through improved customer or stakeholder experience. Projects were selected to ensure a variety of returns. A third were picked for synergy, and another third for revenue generation, and the final third for improved compliance or experience, says Sahli. Each group was asked to build a business case and make specific commitments on the expected benefits in the relevant dimensions.

“Then we handed it over to the business units,” and stepped back, says Sahli. IBS provided some oversight, but implementation and operations were kept at the local level. “The Center of Excellence is doing the governing, the strategizing, and the enabling,” he says. “But the legwork is done by the service provider and the local division.”



“This is very exciting, as it enables our teams to have more hours to focus on value-added work to support our business and execution.”

GLENN JONES, RPA Process Lead

Today, a Bot Does That

The Mondelēz International Customer Engagement facility in Wilkes-Barre, Pennsylvania, is responsible for a broad range of customer-focused activities, including transportation, replenishment, sales support, and beyond, with approximately 60 different work streams within a single site.

Given such a wide range of skills and experiences, managers within the Wilkes-Barre team were quick to identify processes ripe for RPA. With the help of a software tool that tracks the user experience in their enterprise resource planning system (ERP), they were able to identify where processes were slowing down and quickly launched their first bots into IT production in December 2018.

One bot was introduced which automated order changes in customer sales. With this change, a process that previously required a number of hours of customer service staff time could now be done by a bot. “This is very exciting, as it enables our teams to have more hours to focus on value-added work to support our business and execution,” says Glenn Jones, RPA process lead.

That one process automation has reduced the time spent from 12 hours per day to one hour, only requiring human intervention when the bot kicks out an exception.

Between December 2018 and April 2019, automating such manual processes has saved significant full-time-equivalent (FTE) hours — enough to offset the costs of implementation.

Other bot-related developments have also positively impacted the customer and consumer experience for the Mondelēz International business in the U.S. The company is one of only a few snack companies that do direct store delivery (DSD) to customers for many of its products. In a given week, many thousands of DSD orders make their way to stores, some as often as three times a week.

DSD provides some powerful advantages, according to Joe Farrell, director of North American Customer Engagement for Mondelēz International. The ability to deliver product the “last mile” to store shelves provides an opportunity to optimize how consumers encounter products at the shelf. Mondelēz International sales reps stock shelves and build end caps (shelving at the end of an aisle), enabling them to highlight sales and special promotions. “We’re a snacking company, and snacks are often impulse purchases for consumers,” says Farrell. “The ability to have an Oreo cookie display next to the milk section in-store or have BelVita breakfast biscuits where coffee and other breakfast beverages are sold creates an opportunity for these brands that can impact how the consumer will purchase.”

While DSD is a strength for the Mondelēz International business, back-end manual processes were limiting agility in-store. When a sales representative finds empty shelves at a store, the rep needs to know what happened and how to correct it. The company already uses analytics to optimize DSD deliveries — identifying out-of-stocks and determining the root cause. But manual processes were preventing them from acting quickly on that information.

How to Manage a Bot

When bots are deployed to handle parts of a process, managers should keep the following considerations in mind:

- When mapping out the business processes considered for automation, estimate the needed number of bots. Each has license and maintenance fees which must be budgeted for.
- Bots operate continuously, which can take some getting used to for managers overseeing those processes. RPA provides the opportunity to look at alternatives and flexibility around the timing of work and system processes.
- Bots can run many different processes throughout the day and night, so the goal is to make the most efficient use of those 24 hours. The downside of that concentration of work is that the failure of one bot can impact operations, potentially taking down multiple processes. “You have to watch the operational aspect very closely,” says Basyn. Having a business continuity plan to prepare for such outages is critical.



“We have increased our ability to further leverage DSD — speed to market, our ability to impact the shelf for the consumer — while taking away a challenge and drawback we previously faced.”

CHELSEA BEDI, Associate Director of Customer Analytics & Data Science

Today, with the help of a bot, more real-time data goes out to the sales representatives. Additionally, for some customers, when an out-of-stock item is identified, the bot checks whether there's product available in the network and, if so, generates an order attached to the next scheduled shipment to that store. That's not an extra trip — meaning it doesn't add additional incremental cost — and it ensures quick delivery of the right products in the right quantities needed to maximize availability.

“Now, we are better able to provide even small quantities of product to close shelf voids,” says Chelsea Bedi, associate director of Customer Analytics & Data Science for Mondelēz International. “We have increased our ability to further leverage DSD — speed to market, our ability to impact the shelf for the consumer — while taking away a challenge and drawback we previously faced.”

Improved consumer experience at the store shelf is an additional benefit from the initiative beyond increased efficiency. “Our increased productivity in FTE savings was already funding the cost of the project, so this is really adding value back to our organization,” says Farrell. “With DSD, speed-to-shelf has tremendous impact. Even eliminating added hours in our world creates meaningful opportunities for our business.”

Another automation pilot the team put in place helped to streamline the sales compliance process. The effort to track and verify customer-reported shortages in deliveries is challenging. Often, there are small amounts involved, and many work hours are required to track these for each customer. By introducing automation into this new process, the group is making more efficient use of its time. Now, the team has a bot tracking these shortages and ensuring that deductions from customers are assigned properly. The tracking produces a clearer picture of what's happening in a much shorter period of time, and the financial team can now quickly see the refunds by both account and store.

That's a good illustration of how RPA, in addition to eliminating non-value-added manual work, has enabled improved business outcomes at Mondelēz International, says Mondelēz International senior vice president Basyn.

In the next phase of their efforts, the Wilkes-Barre team will be exploring how RPA may help support the company's e-commerce and alternative channels business. “This technology enables us to be nimble as we lead the future of snacking, looking at how we can deliver on consumers wants and needs year-round, even beyond the traditional seasonal windows.

We are excited to further explore other opportunities with RPA and intelligent automation that may be appropriate for our business, including AI and machine learning.”

From Local to Global

Beyond Wilkes-Barre, Mondelēz International is implementing automation globally through IBS.

For example, a bot is increasing compliance in expense reporting. To be reimbursed, employees are required to submit hotel bills that include the address of their corporate office. That detail often is overlooked when employees are rushing to check out and get back on the road. Now, a bot sends reminders. “This happens very close to the moment they are checking out, so it increases compliance rates,” says Basyn.

A more intelligent travel bot is in the works, says Sahli. Figuring out the rules and regulations of various countries is a complex and time-consuming task when constructing an itinerary. What visas are required by which countries? Are there specific immunization certificates travelers must carry? IBS is now building a database with all such requirements, and a bot will pull all the relevant information together, using chat as its communications interface.

“You tell the chatbot your travel plans,” explains Sahli, who is based in Zurich. “Maybe I’m going to the U.S. first, then on to Costa Rica, then Brazil, then back to Zurich. The chatbot will give me a travel profile, informing me of all the requirements.”

One of the greatest benefits of RPA is its ability to catch errors quickly. For example, supplier invoices can be scanned and a bot can compare them to contract terms. “We can better understand whether invoices are in compliance with contract terms,” Basyn says.

“So this is not only about saving time or automating manual work, it’s about doing more because the system can do more,” says Basyn.

All told, the five-year project — including the centralization of services into the IBS and the implementation of RPA projects — is positioned to deliver significant savings and capabilities, says Basyn.

Its cloud-based “robotization-as-a-service” model has proven to be a cost-effective way to implement intelligent automation. “By partnering with a service provider, we didn’t have to invest in that capability; we didn’t have the capital expenditure, and we didn’t have to build up a huge organization before we got our feet wet,” explains Sahli.

Of Course, Nothing Is Ever Simple...

Mondelēz International’s automation efforts have not been without their challenges. RPA and intelligent automation are cutting-edge technologies, new for the managed service provider as well as Mondelēz International. The earliest projects, while small in scale, had their difficulties. “Our provider suffered a lot with the very first project in terms of operational support,” recalls Basyn. She receives daily reports on the performance of the bots, and some, initially, were less than encour-

aging. “When I saw that only three out of 18 processes assigned to the bot ran well, that set off alarm bells,” she says. “And in the beginning, this was happening a lot.”

The provider learned from those early experiences. “For the next project they increased their investment massively, and now it’s working well,” says Basyn. Today, her daily reports usually show most robots running most processes well. But she still checks those reports every day.

The biggest challenge has been — and will continue to be — marketing the benefits of automation internally, says Basyn. The groups that have done pilots, like Wilkes-Barre, were eager for innovation and saw the potential. As Mondelēz International scales RPA and intelligent automation across the company, the decision to opt in rests with each business unit. Basyn hopes that communicating the positive results retrieved from projects in Wilkes-Barre will help. Still, “We need to do better marketing and communication about what has been done and what value it has produced,” Basyn says.

Strategic Goals for Future Automation

Having built a foundation with RPA, Mondelēz International is now preparing for the next steps.

Sahli’s innovation team has honed methodologies and governance policies across the company in ways that will allow automation to be scaled. “We have templates for everything from ideation and process mapping to project design and completion,” he says. “We even have an operations handbook. This is a very, very well-oiled machine.”

Embracing Automation

Robotic process automation can cause nervousness in the workplace, as employees look at their roles and how automation impacts both their work and surroundings.

“Communications and transparency are particularly important as an initiative like RPA is launched,” notes Glenn Jones, RPA process lead for Mondelēz International in Wilkes-Barre. He shared that the site was largely focused on automating routine, repetitive tasks, which actually freed up time for employees to perform more interesting, value-added analytical work.

“Since we’ve taken this step, employees are engaging more with customers with the additional time they have been able to get back within their days,” Jones added. “The type of value-added activities that people are now doing

includes things like collaborative forecasting, E2E supply chain optimization work, and analytical insights focused on the customer.”

Key to success is involving employees early and often in RPA processes.

In mapping processes, for example, employees can demonstrate how they do their work, even creating videos of themselves. Getting to this place required a lot of openness by employees and their engagement in sharing how they do the specifics of their work,” explained Chelsea Bedi, associate director of Customer Analytics and Data Science for Mondelēz International.

Jones set up sandboxes where employees could interact with bots, testing out how they performed the tasks and offering feedback. He also met with employees to get their input on potential improvements throughout the process.

The company's ultimate goal for intelligent-automation-as-a-service is a global customer interaction platform that would serve up all sorts of intelligent automation capabilities to internal customers. "It would have an array of capabilities, including RPA, machine learning, and natural language processing, and the local entity could simply plug and play whatever capability it needs," Sahli says.

At the same time, Mondelēz International is moving beyond RPA into true intelligent automation. For example, a chatbot now interacts with sales reps when they are in the field, allowing them to rapidly check order status, update or modify orders. This real-time, on-the-spot interaction means better and faster customer service, according to Sahli.

Strategically, Mondelēz International has outlined the next four steps:

1 Move to higher-level automation. "We're going to go into the direction of leveraging more AI and machine learning for predictive business outcomes like understanding sales, shipments, and making better financial forecasts," says Basyn.

2 Use data more effectively by integrating processes with technology. The company is in the process of integrating its shared service and IT organizations under the IBS banner. "The goal is to bring process and technology together to increase opportunities to apply analytics exponentially," says Basyn. That means using machine learning and predictive analytics to enable robots to start making data-driven decisions without human facilitation. "Once you combine processes and technology together, really good things can happen," Basyn says.

3 Automate processes end-to-end. So far, Mondelēz International only has been automating pieces of business processes. Doing end-to-end would produce broader business benefits, says Basyn. One project in the planning stage is "initiative to market." This process would encompass everything from product ideation to packaging to delivering the new product to grocery store shelves. "That process now goes through many handlers," Basyn says. "So, how can we automate it? How can we create visibility to see where we are?" If Mondelēz International gets that right, she believes it will reduce time to market.

4 Create a universal help desk. Basyn wants to explore consolidating all the company's help desks. "I have people supporting many different help desks of various kinds: IT, travel, consumer call centers, invoicing, supplies invoicing, customer receivables, HR, etc.," explains Basyn. Could the company create one central help desk for all functions, improving quality and reaping enormous economies of scale? "It's complex because each area requires different expertise, but the idea would be to get the machine to direct the right calls to the right agents," she says.

Mondelēz International has seen enough in the first step of automation, RPA, to move forward with confidence and great expectations for greater ROI. The company's pilot projects have demonstrated returns across all five dimensions — synergy, cost avoidance, revenue growth, increased compliance, and improved experience — and that has whetted its collective appetite for the further fruits of ever-more intelligent automation.

The company's eyes have been opened. "We are starting to understand that this has huge potential for us," says Basyn. ●

INTERVIEW:

AI Expert Tom Davenport on RPA in the Enterprise

MIT SMR Connections spoke with Tom Davenport, author of *The AI Advantage: How to Put the Artificial Intelligence Revolution to Work*, to talk about RPA and intelligent automation. Davenport is the President's Distinguished Professor of Information Technology and Management at Babson College, a fellow at the MIT Initiative on the Digital Economy, and cofounder of the International Institute for Analytics.

Q: Is RPA the first step toward AI?

A: I think it's one of several technologies that companies adopt. If you are only interested in cost reduction, it would be the first. It tends to offer the highest returns of any AI technology. However, I argue that you should have a broad portfolio of technologies if you're really interested in AI. Because RPA isn't that smart, it makes sense to combine it with machine learning technology so it can make decisions. A lot of work is a combination of assembling information and moving the task along, which is what RPA does. But, then, how do you decide based on that information? For example, is this contract amount consistent with other contract amounts? Is there a pattern here that indicates possible fraud?



“I’m a big believer in process reengineering. You really should improve your process before automating it. But there are a fair number of companies that don’t do it, either because they’re lazy or don’t have a process improvement group.”

TOM DAVENPORT, Professor, Babson College

Q: To what extent do companies need to rethink processes before implementing RPA?

A: I'm a big believer in process reengineering. You really should improve your process before automating it. But there are a fair number of companies that don't do it, either because they're lazy or don't have a process improvement group. But of the companies I've interviewed, about 80% have said they do at least some Lean Six Sigma analysis. If a company has a culture of process improvement, it's a no-brainer to do an analysis to see if you're automating something that you don't even need to be doing at all.

Q: If you think of AI as a continuum of no automation to some RPA to machine learning to natural language processing, where are most companies on this spectrum?

A: Among large companies, probably 25% have some sort of RPA work underway. Of those, it's a pretty small proportion that combine it with machine learning. But these terms are not clearly defined. Machine learning in its simplest form, for example, is just predictive analytics.

Q: What metrics should companies use to measure success?

A: There are different categories of measurement, such as can we do more transactions with the same number of people? Can we grow that particular process or task without adding people? Can we replace outsourcers? That's the clearest value metric that companies are using. Nobody really bothers much to compare error rates because RPA doesn't make errors — at least once you get it running. And to do a serious comparison of RPA with a process, you have to have the discipline necessary to improve the process first. Do you have the discipline necessary to measure the process when it's done by a human versus when it's done by a machine?

Q: How are companies countering their employees' fear of automation? You always hear, "We're not automating jobs, we're automating tasks." Is that true?

A: It is true. Most people do a lot more than just one task, and there are lots of examples where workers welcome getting rid of some of the crappy ones. But I almost admire companies that admit that there will be some job loss as a result of RPA. However, at this point, job loss will be slow and piecemeal. I think the real threat is to the offshore outsourcing industry. ●



Sean Harapko is the EY Americas Supply Chain Reinvention program and Regional Supply Chain and Operations leader. He has more than 25 years' experience helping enterprises deliver on a broad range of objectives including supply chain transformation, automation, digitalization, innovation, optimization, and sustainability.

SPONSOR'S VIEWPOINT

Intelligent Automation and the Art of the Possible

How should enterprises that want to unleash the full transformative power of intelligent automation across the organization begin their journey? Should they start where many have, by picking off low-hanging fruit and getting some quick wins, or should they first take time to envision what their far-off destination may look like and begin to chart that more ambitious course?

The story of Mondelēz International makes a compelling case for taking the long view right from the start, and engaging in what we call “the art of the possible” to create a vision of end-to-end transformation. By taking this expansive, future-oriented approach, an enterprise can better maintain momentum for the long haul and win buy-in at all levels for adoption of these disruptive, game-changing technologies.

In contrast, the early days of RPA and automation saw many people focused on low-hanging fruit, picking off rote or painful tasks without considering process improvement. While that resulted in quick wins, programs that started this way often lost momentum without the context of a larger program of ongoing change. By instead looking at the potential for intelligent automation across complete processes end-to-end, the quick wins can still be accomplished, but they will also lead to the next stage of a well-planned road map.

Uncovering the art of the possible begins with ideation sessions that include senior, cross-functional leadership, from both IT and the business. These sessions spark innovative ideas; immerse teams in understanding possible solutions, capabilities, and assets; and result in actionable road maps for implementation. And they can help stakeholders identify goals and benefits that go beyond mere cost-cutting to driving innovation and growth.

We advise that leaders aiming to use intelligent automation to transform their businesses keep these four pillars in mind:

1. Make the initiative business-led and IT-supported. While business leaders must drive process improvements, these technologies essentially introduce a new digital workforce to the enterprise. IT takes on an important role in helping to manage and maintain this workforce.
2. Evaluate processes holistically and end to end. Business processes should be optimized as they are automated. Leaders must also consider organizational alignment and plan for both change management and risk management.
3. Bring a full technology suite to solve business challenges. Evaluate a full range of possible technology solutions, including newer technologies like machine learning, RPA, natural language processing, AI, chatbots, and blockchain in combination with existing and upgraded functional application suites like SAP.
4. Provide full-service capabilities. Plan to stand up or plug into an existing center of excellence for intelligent automation to support the entire life cycle: ideation and discovery; design, build, and test; and run, support, maintain, and improve.

Executing those pillars takes commitment and investment, certainly. But developing a vision for how intelligent automation can support innovation and digital transformation can inspire stakeholders throughout the business to stay with the journey for the long haul.

— **Sean Harapko**, EY Americas Supply Chain Reinvention Leader