BOTS FOR BUSINESS: BEYOND THE SHOP FLOOR

BOTS CAN BOOST MANUFACTURERS' PERFORMANCE, FROM THE BACK OFFICE TO THE SALES FORCE

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Manufacturing firms will be investing hundreds of billions of euros into the Internet of Things (IoT) and digital automation over the next five years, as they seek to enhance their shop-floor productivity and efficiency. In the past, non-production processes – in sales, customer service, finance and administration, and strategic procurement – have not typically been the main focus of robotization.

But that is starting to change, as robotic process automation – or "bots" – and artificial intelligence (AI) increasingly become capable of performing tasks that previously could only be done by humans. Bots will carry out a significant share of repetitive back-office processes and administration – executing them faster, more reliably, and with greater compliance. (See Exhibit 1.) And they will also progressively address jobs with a lower degree of standardization, for instance in sales and customer service. Financial benefits will be significant. Bots could increase revenues, cut the cost of some processes up to between 60 percent and 80 percent, and improve productivity up to 50 percent.

Exhibit 1: Exemplary use cases for bots and artificial intelligence performing on human tasks

	TASK BOTS (RULE-BASED)	SMART BOTS (GOAL-ORIENTED, REACTIVE)
SALES/QUOTATION	• Basic quotation process • Creditworthiness checks • Account updates • Follow-ups with customers	• Analytical support for sales staff • Lead generation • Cross-selling recommendations • Configuration suggestions • Pricing and discount suggestions
AFTER SALES	• Service alerts to customers • Customer service history update	• Service and spare parts recommendations • Warranty and complaint handling • Digital customer self-service
STRATEGIC PROCUREMENT	• Web "crawling" • Flaws detection • Supplier registration • Account and contract updates	• Demand forecasting • "RfQ machines" • Auction handling
FINANCE/ CONTROLLING	• Basic financial reports • Account reconciliation • Invoice processing • Dunning	• Insights generation for management • Fraud investigations • Early risk warning
HR/ADMIN	• "Answering" basic HR questions • Automated onboarding	• Candidate screening • "Interviewing" via chat bots • Legal contract check-up • Compliance monitoring

Source: Oliver Wyman analysis

AUTONOMY AND BEYOND

An important characteristic of basic bots is their autonomy. Take invoice processing and control, a procedure that typically requires the extraction of data, such as a sum to be invoiced, bank details, and the reason for payment. Each piece of information relies on a different source, such as a supplier database, a file of financial details, and internal information on pricing and discounts.

Software is now able to extract data automatically from scanned documents or photos. A number of startups such as Gini have already emerged in this area, developing software that scans or photographs paper and digital documents and extracts relevant information, such as invoice or contract data. This is then used to fill in forms and pay invoices in a way that merges seamlessly with existing corporate systems.

When controlling invoices and payments, a bot can now have its own system ID so it carries out cross-checks itself. Bots are also system agnostic: Until now, workflows have typically been part of a single IT system; but bots can carry out processes across different systems and databases. That means a bot can automatically maintain and update a manufacturer's supplier database, discounts, and negotiation statuses.

Taking the example of a European bank, where the potential for process acceleration in the sales back-office function was identified. Robotization significantly reduced throughput time in repetitive tasks, such as customer address changes or customer account opening/closing. In this case, the equivalent of about 100 full-time employees were freed up to address higher-order tasks and work in growth areas.

Advanced bots have two more characteristics that differentiate them from traditional enterprise software: They are goal oriented and reactive to the environment. They are enriched by machine learning, natural language processing, and the ability to process unstructured data, so they can act as cognitive virtual agents to work towards a desired outcome.

This lets them carry out a range of significant tasks that go beyond traditional software. In human resources, for example, they can automatically screen job candidates using text processing and facilitate a conversation with them. They can automate onboarding processes for new employees, and answer basic questions – such as vacation status – via chatbots. They can monitor actual and scheduled hours worked to flag timesheet issues, and use optical character recognition to automatically evaluate contracts and legal documents. Other applications will come through finance departments, where bots will be able to automate standard processes (for instance around account reconciliation) and will enable smart robotization in planning, reporting, and risk management.

up to 50%

productivity improvements by using bots

HUGE DATA, POWERFUL ALGORITHMS

Kreatize, a Berlin startup, has set up an AI-based platform for strategic procurement. Manufacturers often need to search around numerous offers before ordering a specific component, a process that is often manually done. The Kreatize platform enables a manufacturer to upload specifications of a component. The platform then figures out the best process for making the part, and matches the manufacturer with an appropriate supplier. This idea could be extended to setting up online procurement auctions and issuing invitations to suppliers automatically.

In customer service, some manufacturing firms already start the follow-up service and spare-parts process based on a trigger point, such as an alert over oil pressure or the state of a tire. Customers get recommendations for spare parts and additional services grounded on an analysis of their existing, connected machines and their historic spending patterns.

Smart bots will be able to use deep-learning algorithms and AI to improve text and voice recognition. Communication with customers, suppliers, and corporate decision makers will then be done through chatbots. In sales, data pattern analysis can be used to suggest prospecting areas or cross-selling opportunities to sales reps. The price quote process can be robotized and enhanced with a chatbot that automatically delivers a proposal with a price based on past quotes, automated creditworthiness checks, or a customer's business history. This kind of bot will even be capable of making decisions based on accumulated experience.

DEVELOPING A FORMAL BOTS STRATEGY

Three out of four international decision makers believe bots with AI will play a fundamental role in increasing revenues and cutting costs. In German-speaking countries, one in five businesses already use AI or else have a pilot program in place. Global revenue with machine learning and cognitive-computing solutions will multiply by five times, to more than 21 billion euros by 2020, according to Bitkom.

To generate value, companies should identify high-impact value pools and use cases, and launch agile pilot-based approaches. The best places to start are processes featuring high-volume, repetitive, rules-based processes that leverage large sets of structured data and feature limited room for human discretion. Smart bots can then be used on unstructured data and more complex decision trees.

But a plug-and-play approach is not the right approach. Instead of setting up bots here and there, companies need an overall digital transformation plan that takes into account their skills and organizational structures. And they have to be ready to invest into robotization tools and machine-learning software that will be able to handle analytics, automation of a number of internal processes, and interaction with humans.

Tech with human characteristics often provokes fears of mass job losses. But companies using bots usually do not reduce their number of employees. Instead, they train them for higher-order tasks or deploy them to improve system intelligence. Moreover, bots may dampen the trend towards global outsourcing that first began 30 years ago. While delegating part of a process to an external third party in a low-cost country reduces costs, it brings its own set of challenges, including time delays, poor communication, and lost efficiency. Bots could well slow the trend of offshoring, and replace it with a new one: Cybershoring.

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