

Unpacking the Intelligent Technology Powering NEVA (NICE Employee Virtual Attendant)

How the robust capabilities of Desktop
Automation technology can enable sustainable
digital transformation

Overview & Table of Contents

With the trend of digital transformation rapidly making its mark within the global economy – every business at some point will need to digitize its business operations in order to remain relevant and competitive. A critical element in any digital transformation initiative is providing the human workforce with real-time guidance and support via Virtual Personal Assistants that are supported by Desktop Automation technology.

This paper will address the importance and complexity of the desktop environment within organizations today and also reveal the significant impact and ROI generated from desktop automation initiatives. In addition, the specific capabilities and underlying technology needed for truly effective and transformative Desktop Automation initiatives will be unpacked.

Introduction



Whilst a common concern is felt worldwide around the uncertainty of human jobs amidst the next technological revolution in Artificial Intelligence (AI) – Virtual Digital Assistants are designed to work in collaboration with human employees, enabling them to focus on more high-value tasks that require a human touch.

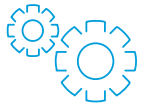
Although Robotic Process Automation (RPA), in general, has seen significant growth and adoption on a global scale, it only partially addresses the digital transformation challenge. Since Desktop Automation exists to enable the best potential of human beings while also effectively and intuitively aligning humans to any organizational change, it is a necessity to ensure true and sustainable digital transformation for long-term success.

Whether organizations aggressively adopt Robotic Process Automation or chatbot solutions, to support both the automation of repetitive tasks and the availability of customer self-service channels – humans will always be central to the proper functioning and sustainability of these solutions. The role of humans is augmented further by aligning Desktop Automation technology to customer-centric operational processes.



Digital Transformation and Automation

How does it work?



Robotic Process Automation, Cognitive Chatbots, and Desktop Automation are the three types of process automation technologies at the core of digital transformation. The Process Automation platform should form the baseline or foundation from which the digital transformation will emerge. In order to deploy all three technologies seamlessly, organizations need to invest in a comprehensive and unified Process Automation platform. Such a platform should hold all the capabilities to perform many different types of automation (including the integration of cognitive technologies into various operational processes). Desktop Automation is the central orchestrator or glue, holding these 3 key automation technologies together,

ensuring that humans are fully aligned to both customer facing and back office processes. Desktop Automation essentially functions as a personal digital assistant to each and every employee, by giving employees real-time, context-specific assistance as and when needed at various points within an operational process. This has proven to reduce the time needed for employees to adopt new processes, technologies, organizational policies, new product info (to name a few) during periods of organizational change. True and robust Desktop Automation capabilities provide an intelligent and highly customizable framework to align the human workforce with technology.



Desktop Automation Unpacked

The True Face of Desktop Automation



Desktop Automation in its truest form comprises of software robots residing within each employee's desktop. The robots have built-in intelligence enabling them to navigate the complexities and dynamism of the desktop environment. This robust functionality enables them to emerge as and when the employee may need assistance or real-time process guidance. The way in which attended robots communicate with employees is via an intelligent, interactive screen. These interactive screens can be fully customized to closely align with the role and responsibilities of the employee in order to assist individual staff to achieve their specific KPI's or performance targets.

The close and unique alignment with each and every individual employee's desktop environment, with an ability to offer real-time assistance and process guidance, unlocks many value drivers for enterprises today. While the deeper value drivers and business cases will be explored at a later stage in this paper, some high level examples of the business value generated from Desktop Automation include:

On the job training via the real-time process guidance reduces the time and cost involved in training and onboarding of new staff members.

Offloading the admin driven and repetitive tasks onto attended robots, greatly simplifies operational processes for employees, enabling them to work more accurately and efficiently.

So often the personality profiles of customer service staff are extravert people who love to interact and connect with customers. These personality types are typically demotivated by all the repetitive and mundane tasks that form a part of customer service job specs. With each staff member essentially having their own personal digital assistant to take over all the admin driven tasks that require speed, accuracy and efficiency, human staff experience increased motivation and job satisfaction as a result of being freed up to focus on what they love most - interacting with the customer on a human level. In addition, this frees up human staff to play a more valuable and consultative role to the customer by way of guiding and advising them through more complex requirements.

Desktop Automation capabilities enable organizations with more business process agility. For example if a new process in the form of a changed company policy needs to be introduced and implemented, it is as simple as creating a new solution file or rule. The new process can come into full effect immediately, with full alignment to employee actions. As employees arrive at work and access their updated Desktop Automation client, they will be intelligently informed of the new process and guided through each step in real-time. This agility allows for quick alignment of staff to new or changed operational processes.



Desktop Automation in Action

Business Cases Illustrating how Desktop Automation Works



As mentioned previously an interactive screen is an intelligent communication tool used to communicate with the user/employee. Desktop Automation interactive screens should have an engaging and relevant interface and design. They can be fully customized with links to obtain additional info quickly as well as pre-programmed with applications, enabling employees to provide new levels of service efficiency to their customers.

Essentially Desktop Automation robots are natural integrators, where they are able to integrate into various enterprise applications, grabbing relevant information from varying sources and then summarizing all the relevant issues to the employee via the interactive screen.

1. Compliance

The rich, interactive screens and robust integration capabilities, enable Desktop Automation to provide real time guidance and assistance to employees. This ensures full employee compliance at each and every stage of a process.

An example of how real-time process guidance supports employee compliance to relevant policies and regulations is through a Compliance Script. The Compliance Script is presented to the employee through the interactive screen, in the form of a disclaimer which needs to be read to the customer.

Furthermore, the system should produce call summary notes, detailing all the actions that took place during the call with the customer. The call summary notes should be automatically transferred to the CRM application at the end of the call. There should also be an option to e-mail the call summary notes to the customer. Since the call summary notes act as proof of what transpired during the call, ensuring that they are updated in the CRM system and shared with the customer, may be an important part of an organization's compliance process.

Read Disclaimer

Mr. Jones , please note that I have filed a [request](#) to increase your credit limit to **\$15,000** . Your credit increase request will be considered, and you will receive a text message, to your mobile phone, with our reply. Please expect a reply by the December 8, 2017 .

Close

Next Step

Read Disclaimer:
Mr. Jones , please note that I have filed a [request](#) to increase your credit limit to \$15,000 . Your cr...

☐ Disclaimer was read to customer
☐ Email information to customer

Next



Desktop Automation in Action

Business Cases Illustrating how Desktop Automation Works



2. Next Best Action

Another example of real-time guidance is presenting the next best action to the employee via the interactive screen. The system can detect issues that may require specific actions from the customer e.g. the deadline for the customer to pay his/her credit card bill. The interactive screen is designed to prompt the employee with information about specific pending issues or required customer actions and it does so with a recommended script. In this scenario the interactive screen has the capabilities to enable the employee to assist the customer to settle his/her credit card bill on the same call. The interactive screen will provide a link to the payment portal application, enabling the employee to proceed with initiating the payment in real-time. This is also a next call prevention measure, taking away the need for the customer to call again to settle his/her credit card bill.

Next best action scripts can also guide employees to upsell or cross sell to customers at the best moment, in real-time. The system will match the most relevant offer to the customer based on his/her profile and purchasing history, which will be presented to the employee via the interactive screen in real-time.

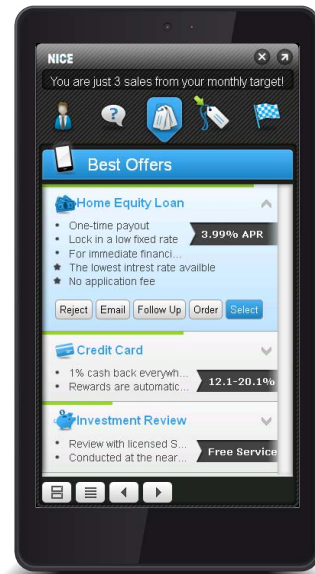


Illustration of a call out screen showing offers that are most relevant to the customer

Next Step

Mr. Jones, your payment due date is tomorrow, would you like to make a payment now?

☒ Yes

☐ No

Next



Desktop Automation in Action

Business Cases Illustrating how Desktop Automation Works



3. Process and Work Optimization

- Single Screen View of Data from Multiple Applications

The desktop robots can integrate into any applications (including CRM systems) to grab information about the customer. All of this data is conveniently summarized and categorized in the interactive screen for the employee. This saves the employee the time and effort of manually opening up multiple applications and searching for the relevant information.

The screenshot shows a web application titled 'Credit Card'. It displays customer information: 'Customer Name: Mr. Douglas Jones' and 'Call Type: Credit Card'. Below this is a 'Contact Details' section with fields for 'Account Name' (Jones Household), 'Address' (1235 Shoreland Blvd, Miami Shores, FL, 33131), and 'Mobile Phone' (a red-bordered input field). Further down, account details are listed: 'Account Number' (144097), 'Current Balance' (\$3,126), and 'Payment Due Date' (December 7, 2017). A 'Next Step' section at the bottom asks 'Mr. Jones, how can I help you today?' with a dropdown menu showing 'Increase credit limit' and a blue 'Next' button.

Data consolidation from multiple sources

- Workload Shedding with Unattended RPA Robots

Customer service representatives have the option to trigger an unattended workflow in order to action a customer's request e.g. if a customer has requested to open up a new bank account, the employee can trigger an unattended robot to update the back end systems with the new information generated from the customer interaction. The unattended robots can also be automatically triggered to carry out certain actions on behalf of the employee. This is how desktop and robotic automation work collaboratively to achieve end to end business process needs.

- Exception Escalations

The close and seamless integration of attended and unattended work flows can enable greater efficiency in addition to the handling of more complex process scenarios, such as a process error or exception. Here is an example of an unattended process encountering a complication, and requiring the system to switch to attended mode in order to obtain assistance from a human employee.

1. A customer dials in and selects an option on the IVR (Interactive Voice Response) to schedule a delivery.
2. An error occurs, where the system fails to create a new delivery item to schedule.
3. The system then moves into attended or desktop mode in order to alert a human employee to intervene. The process is still automated but in attended mode, where attended robots may send various alerts to the employee by means of the interactive screens. In this case, the interactive screen is prompting the employee to call the customer to confirm the delivery details after which a new delivery item to schedule is generated and the employee triggers the unattended automation to complete the process and send a confirmation notification to the customer.

This example demonstrates a professional and seamless approach to escalate and handle exceptions with a combination of desktop (attended) and robotic (unattended) automation.

4. Change Management Tool

Desktop Automation is a powerful tool to embrace during times of organizational change. Take for example a merger scenario, where two business entities become one. This is a highly complex scenario that requires the integration of two different types of operational setups (spanning front and back office functions) into one single and unified operation.

The inclusion of Desktop Automation enables all employees to speak the same language through the customized step by step process guidance in real-time. Furthermore Desktop Automation has been proven to be an effective measure to reduce training requirements for staff. The real-time process guidance offers the employees effective on the job training resulting in meaningful and sustainable learning. New recruits can start their new jobs straight away with the reassurance of knowing that they will be guided every step of the way and supplied with all the support materials they need such as scripts, links and built in applications.

Delving Deeper

The Dynamic and Complex Nature of the Desktop Environment



We have already established the essential role that human employees fulfill among various digital technologies within any enterprise wide digital transformation initiative. A critical component to understand in-depth is the dynamic nature of the desktop environment, due to its complexity from continuous human intervention.

In order for organizations to truly leverage the capabilities and value drivers of Desktop Automation, it is important to understand and master the complexities of the desktop environment. As humans are continually opening up many different applications and interacting with different screen elements, a rich and comprehensive Desktop Automation solution should effectively navigate the following desktop complexities:

- Multiple Screens from a Single Application

This refers to a situation when a user opens up more than one screen from a single application at a given point in time. When two different windows from the same application are open with different customer info, the technology needs to ensure that the automation is initiated from the correct window with the correct customer information.

- User Intervention

Another dynamic element illustrating human activity within the desktop environment are cases when the users may close various applications or interact with the applications in a way that interferes with the automation flow. The technology has a mechanism in place to detect the exact location of the screen connectivity break, enabling users to resume the automation with little to no downtime.

- Minimized Applications

Typically when employees are working on their desktops, many applications will naturally be minimized. The Desktop Automation technology should have the capabilities to connect into minimized applications while running an automation. This ensures the proper running of the automation in the background while the employee may be working on something else on the desktop.

- Different Resolutions and Screen Sizes

Different desktops will vary in resolution and screen size depending on the individual preferences of the employees. The technology should be able to read and function well from a variety of different resolution settings.

- Interfacing with Unattended Robots and Chatbots

Some additional yet critical complexities to master is the ability of the desktop robots to interact with unattended robots by triggering unattended process automations. Likewise desktop robots should have the capability to communicate with chatbots. Should a chatbot receive a complicated customer query that cannot be actioned by unattended robots (in the back end), the query should be routed to a desktop robot in order to alert a human employee to intervene.

This multi-faceted capability should be supported by a robust and unified automation platform with the ability to carry out different types of process automations. This also enables the added benefit of scalability i.e. increasing the number of robots in order to support an increase in operational activity during seasonal or peak periods.

These are an initial list of some of the desktop complexities that need to be fully supported by a robust Desktop Automation solution.

Key Capabilities

for Robust and Transformative Desktop Automation



The following features are essential in order to unlock the real business value of Desktop Automation.

1. Connectivity

Robust desktop connectivity capabilities are needed to support the dynamic and unpredictable nature of the desktop environment. Object based connectivity is the best option to achieve stable connectivity in order to ensure the continuity of process automations on the desktop. In the event of organizations not being able to install applications on the desktop, then surface automation is a form of connectivity used to operate in VDI (Virtual Desktop Infrastructure) environments. In order to cover all bases, using a vendor who provides a combination of object based connectivity and surface automation (utilizing shape analysis and image recognition) is recommended.

2. Multi-Instance Support

A very common behavior of desktop users includes opening of multiple instances of a single application. The attended software robot therefore needs to be able to connect to the correct instance in order to work with the correct data within the automation. In such a scenario there is a need for the robot to be able to connect to the right instance. Here is an example:

An employee receives a call from customer A while the CRM application is populated with customer A's information. Just as the employee is about to wrap up the call, simultaneously a new call comes in with a new instance of the CRM application being populated with customer B's information. The technology needs to support the employee to move freely between the two instances all the while giving the attended robot the ability to apply the right logic to the correct instance.

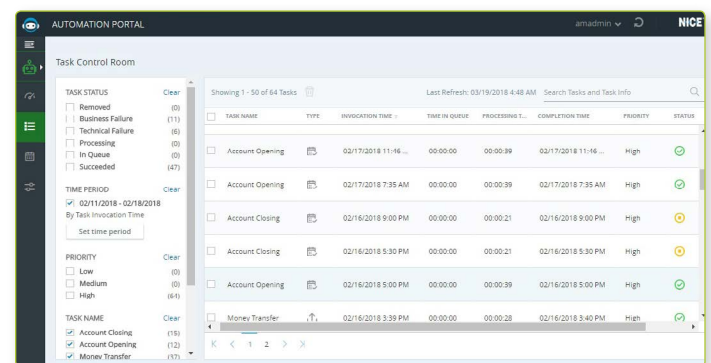
3. Rich, Flexible and Interactive User Interface

Interactive screens are an essential part of Desktop Automation forming a mode of communication between the attended robot and the employee. In order to create an optimized environment for the employee to work more productively and efficiently, the ability to create a rich and customizable UI for the interactive screens is essential. In addition, the interactive screen UI should encompass a fully functional, modern and customized design. For example, the next best action feature is best displayed as a wizard- like interactive screen.

4. Centralized Monitoring and Control

A centralized control room is necessary for the effective management of thousands of workstations with varying profiles. The control room is designed to hold and display all of the details surrounding the functioning of the attended robotic workforce. Should an error occur, this can be identified easily taking away the need for IT departments to search for logs.

NICE's Control Room capability enables the management of many thousands of users, supporting high volume and more complex attended process automations. The system is fully scalable and supports the addition for more robots when additional processing power may be needed during peak or surge periods within an organization.



Key Capabilities

for Robust and Transformative Desktop Automation



5. Low Footprint Robot (Minimal CPU Consumption)

In order to provide a valuable and reliable service to customers, employees need their systems to perform with speed and efficiency. To enable this, a low footprint is needed in terms of CPU and memory consumption in order to not obstruct and slow down the day to day activities of the employee. When choosing an automation vendor, it is essential to verify and check that the software will have a minimal impact on the speed and performance of the employees' machines.

6. Real-Time Responsiveness

Real-time responsiveness is an important capability that will impact the performance of an employee's desktop. Ideally the robot should have the capabilities to respond to a request quickly, in real-time. The underlying technology that is needed to enable real-time responsiveness is triggering. Triggering enables the robots to only respond to a specific event when triggered by an employee's action on the desktop, as opposed to polling which continuously monitors the desktop, utilizing too many resources in the process.

7. Deployment

Packaging and distribution of software is a significant undertaking by any IT division. Unlike unattended automation software, attended robotic software requires technical expertise to update the logic or robotic configuration in an efficient manner.

NICE provides a built in mechanism to update the logic and software installation, taking away the need to repackage.

An auto update mechanism has the capability to push software updates to the desktop without the need to involve IT. When employees turn off their machines, the desktop software will connect to the server in order to check for and download updates.

8. Analytics – Business Insights from Data Collection

The ability to measure, quantify and analyze the performance of a process automation is essential, making analytics and reporting an important capability for Desktop Automation deployments. During the design phase, the data to be collected, should simply be marked and during run time (when the process automation is running), the data is collected and made available for reports. An integrated Business Intelligence (BI) tool can then be used to display the out-of-the-box reports in addition to producing customized reports, based on the data collected.

9. Optimized Deployment Mode for Desktop Terminal Server Environment

Running applications from both desktop and remote, Citrix like, environments is common practice for most organizations today since business process are typically performed across different environments. In order to handle this type of scenario, it is necessary for attended robots to reside in both the desktop and virtualized environments where they should have the capabilities to communicate and transfer data between each other. This capability enables processes automations within a complex environment by seamlessly aligning desktop activity with remote activity.



Closing Words



In a race to attain true and sustainable digital transformation, Desktop Automation is a technology that forms an essential part of ensuring the success and sustainability of any digital transformation initiative. In order to build competitive advantage by creating strong service differentiators backed up by process efficiencies, enterprises need to be investing in comprehensive process automation platforms. Whats more, powerful automation platforms should support essential technologies to successfully drive organizations into the digital era.

About NICE

NICE Ltd (Nasdaq:NICE) is the worldwide leading provider of both cloud and on-premises enterprise software solutions that empower organizations to make smarter decisions based on advanced analytics of structured and unstructured data. NICE Ltd helps organizations of all sizes deliver better customer service, ensure compliance, combat fraud and safeguard citizens. Over 22,000 organizations in more than 150 countries, including over 80 of the Fortune 100 companies, are using NICE Ltd solutions.

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